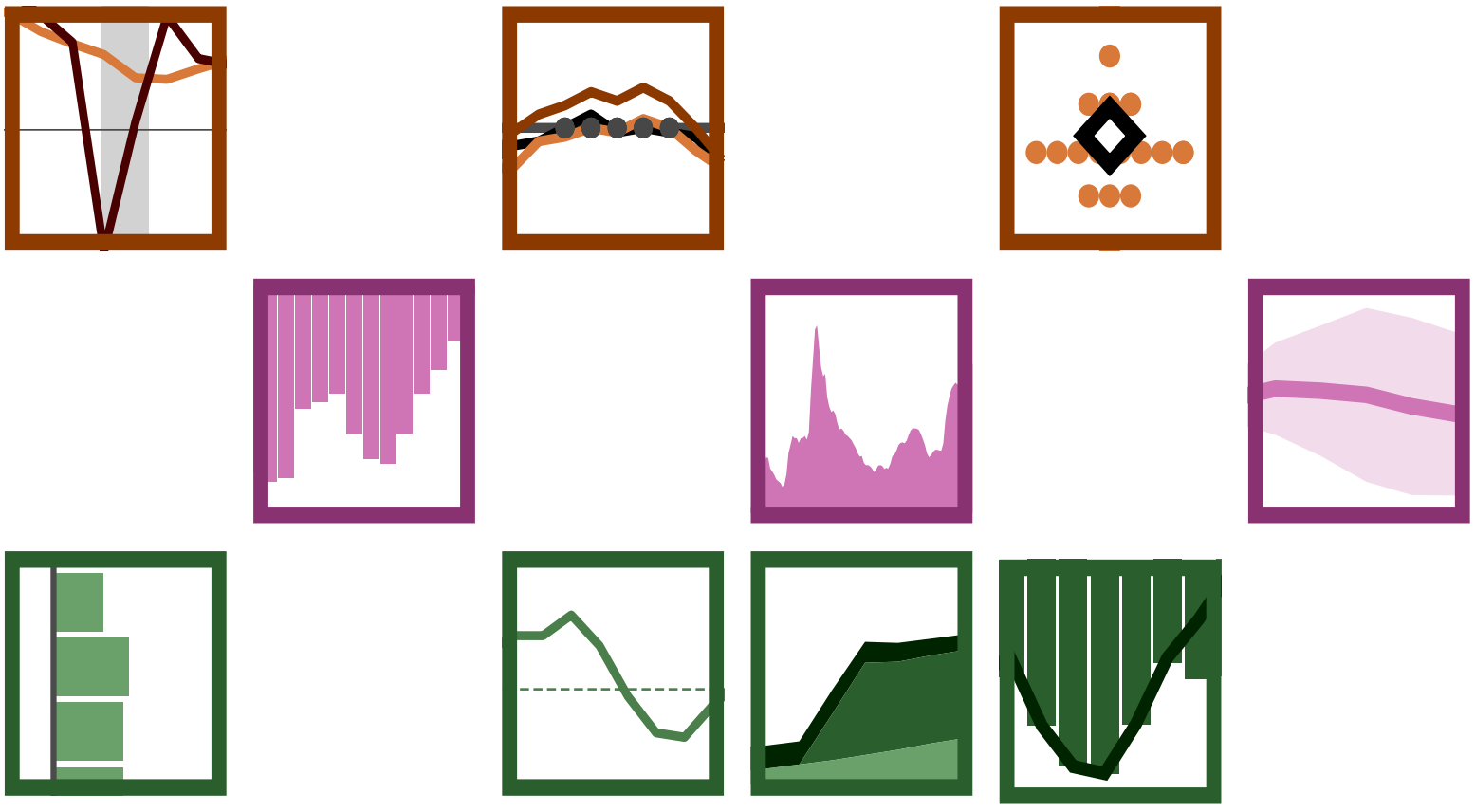
Congressional Budget Office
Nonpartisan Analysis for the U.S. Congress

A Guide for Choosing Graphics



MAY | 2023

THIS GUIDE CONTAINS EXAMPLES OF THE WIDE VARIETY of graphics that have been produced for various publications at the Congressional Budget Office. As authors and reviewers at CBO consider ways to make forthcoming publications more informative and visually engaging, the collection may be a useful resource, as are CBO's graphics editors.

Besides presenting examples of common graphics, this guide also includes examples of how various techniques (such as annotations, captions, insets, nesting, and small multiples) can be applied to common graphics to help those graphics convey their message.

In addition, the collection presents examples of less common graphics (such as Sankey diagrams, Marimekko charts, timelines, maps, heatmaps, and treemaps). As some of those examples suggest, CBO's graphics are not limited to conveying data; they can also illustrate concepts or processes.

Because the focus of this guide is information about choices among various types of graphics, examples are reproduced as they were published (in various types of publications and some, a while ago), without regularizing some small aspects of formatting and generally without including notes that accompanied the graphics.

A graphic should be considered in the context of the entire publication. When considering a graphic, think about these questions:

- What is the overarching narrative of the publication?
- What is the message being conveyed by the graphic?
- Does that message help tell or reinforce the overarching story of the publication?

If the answer to the third question is no, modifying the graphic will do little to improve the publication. Instead, try to think of a message that would help tell the publication's story. Then try to think of a graphic that would convey that message—perhaps looking through this guide for inspiration.

Ideally, the publication's overarching story will be mirrored in its "visual story," so that a reader can move from figure to figure and understand the publication's main points even before reading the text. A good way to figure out the visual story (and thus to choose the graphics for a publication) is to think about which graphics would be included in a briefing about the publication.

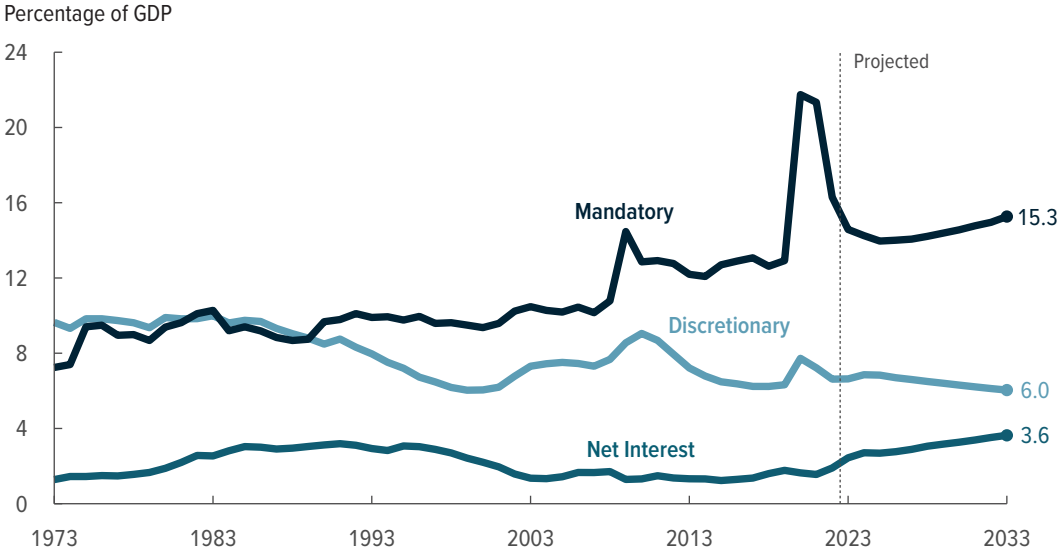
Graphics Launchpad

Type of Graphic	Goal of the Graphic	Number of Variables Charted	Number of Time Periods Shown	Page
Line Graph, I	C T	Few	Many	1
Line Graph, II	C T	Few	Many	2
Line Graph, III	C T	Few	Many	3
Line Graph, IV	C T	Few	Many	4
Line Graph, V	C T	Few	Many	5
Bar Graph (Horizontal)	C T	Few	Few	6
Bar Graph (Vertical)	C T	Few	Many	7
Segmented Bar Graph, I	C M T	Few	Few	8
Segmented Bar Graph, II	C M T	Few	Few	9
Segmented Bar Graph, III	C M T	Few	Many	10
Target vs. Actual Bar Graph	C M	Few	One	11
Nested Bar Graph	M	Few	One	12
Waterfall Chart	M	Few	One	13
Marimekko Chart, I	C M	Few	One	14
Marimekko Chart, II	C M	Few	One	15
Combined Bar and Line Graph	M T	Few	Many	16
Stacked Area Chart	M T	Few	Many	17
Small Multiples, I	M T	Many	Many	18
Small Multiples, II	C M	Few	One	19
Fan Chart	D T	One	Many	20
Pie Chart	M	Few	One	21
Doughnut Chart	M	Few	One	22
Segmented Bar Graph, IV	M	Few	One	23
Combined Pie Chart and Bar Graph	M	Many	One	24
Treemap	M	Many	One	25
Box Plot	D T	Few	Few	26
Modified Box Plot and Beeswarm	D T	Few	Few	27
Violin Plot	D T	Few	Few	28
Dot Plot	M T	Many	Few	29
Map, I	D	One	One	30
Map, II	D	One	One	31
Map, III	D	One	One	32
Sankey Diagram, I	M P	Many	One	33
Sankey Diagram, II	M P	Many	One	34
Timeline	P	Few	One	35
Flowchart, I	P	Few	One	36
Flowchart, II	P	Few	One	37
Annotated Figure	(Various)	Various	Various	38
Heatmap, I	D	One	One	39
Heatmap, II	D	One	Many	40
Connected Scatter Plot	C (Covariance)	Two	Few	41
Icon Array	M	Many	One	42
Illustration, I	(Various)	Various	Various	43
Illustration, II	(Various)	Various	Various	44
Diagram	(Various)	Various	Various	45

C = Comparison (Compare one set of values with another)
D = Distribution (Show the distribution of a set of values—to identify outliers, show normal ranges, and so on)
M = Makeup (Show how parts make up the whole)
P = Process (Show how something works)
T = Trend (Illustrate variables' change over time)

Line Graph, I

Outlays, by Category

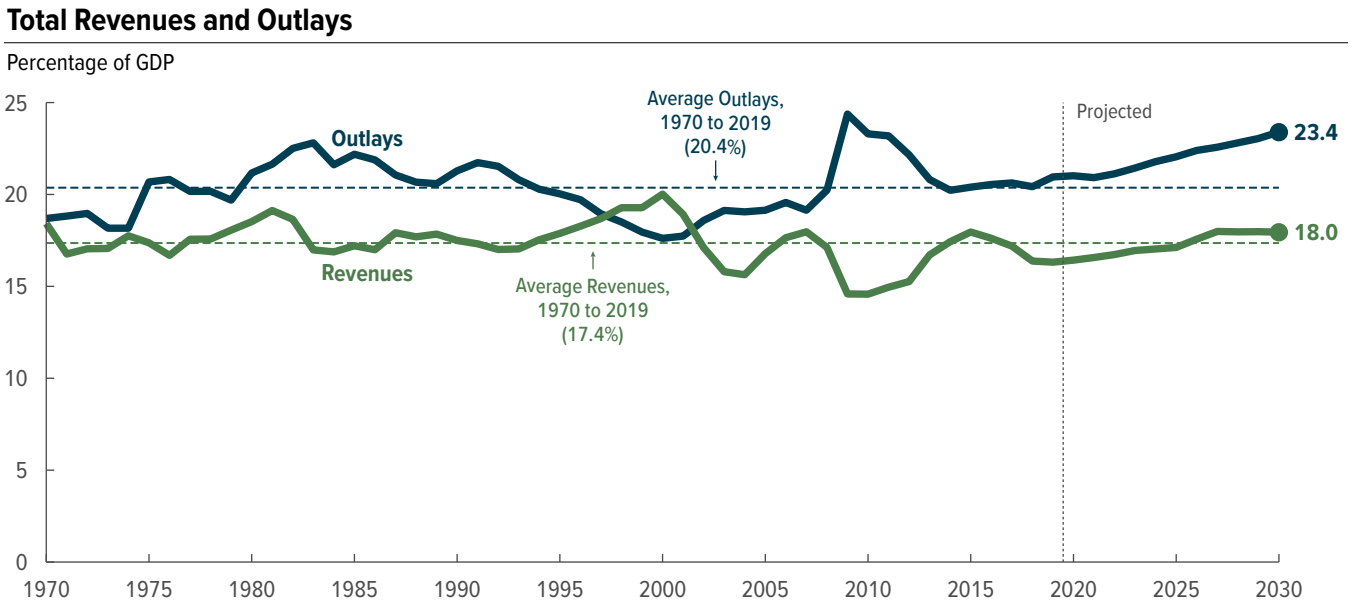


In CBO's projections, rising spending on Social Security and Medicare boosts mandatory outlays, but total discretionary spending falls in relation to GDP. As the cost of financing the nation's debt grows, net outlays for interest increase substantially and, beginning in 2030, exceed their previous peak.

Line graphs are widely used at CBO. Among the five versions provided, this version uses space on the right for a caption, because captions are generally encouraged in CBO's publications. (When a figure is just one column of text wide, though, the caption goes beneath it rather than to the side.)

Congressional Budget Office, *The Budget and Economic Outlook: 2023 to 2033* (February 2023), p. 21, www.cbo.gov/publication/58848.

Line Graph, II

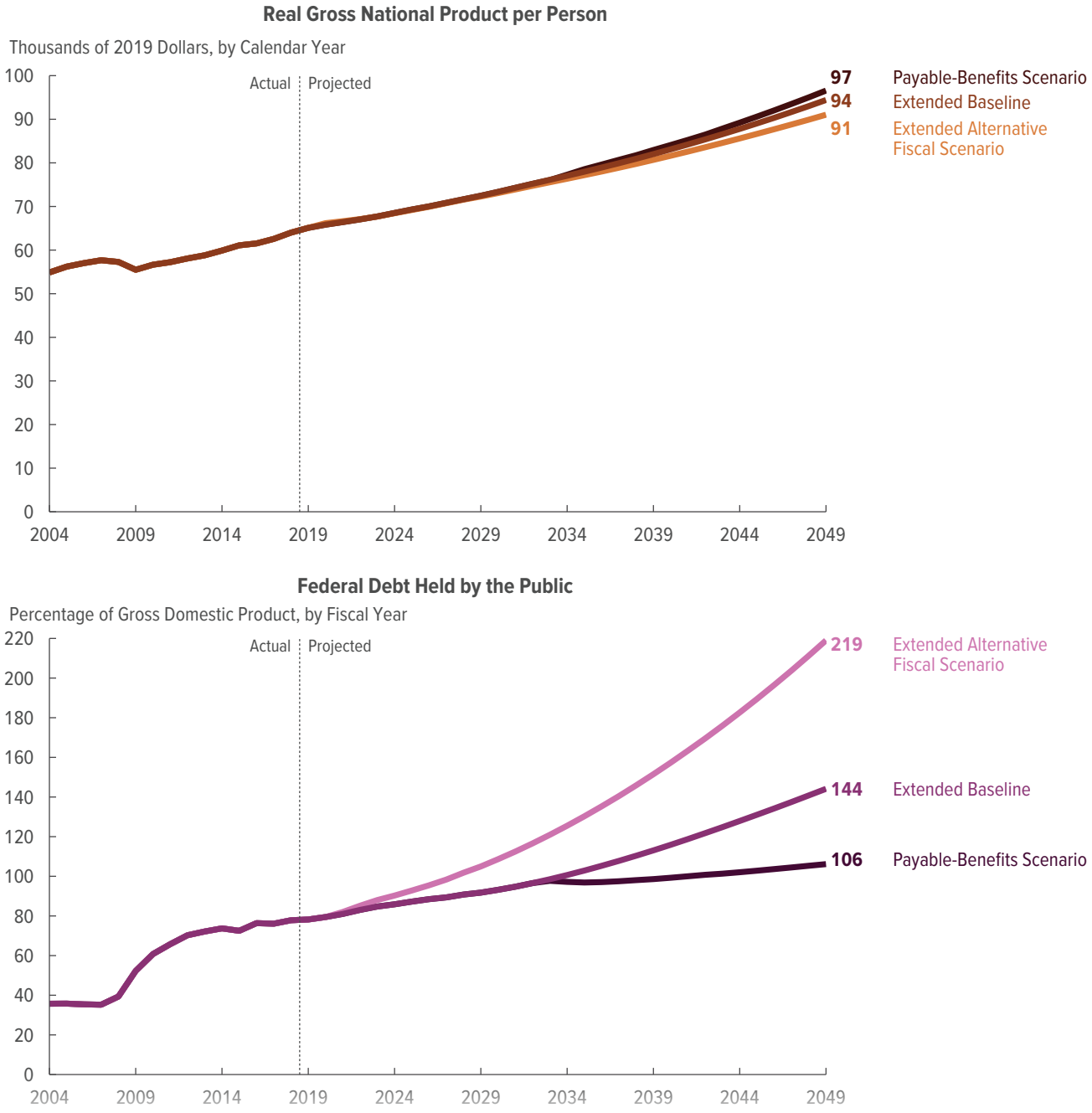


This line graph does not include a caption, though it adds value labels. (For guidance about when and how to use captions and value labels, see *Guidelines for Graphics in CBO's Reports*, which is located in the "Review and Editing" section of CBO's intranet.)

Congressional Budget Office, *The Budget and Economic Outlook: 2020 to 2030* (January 2020), p. 8, www.cbo.gov/publication/56020.

Line Graph, III

Output per Person and Debt Under Three Scenarios

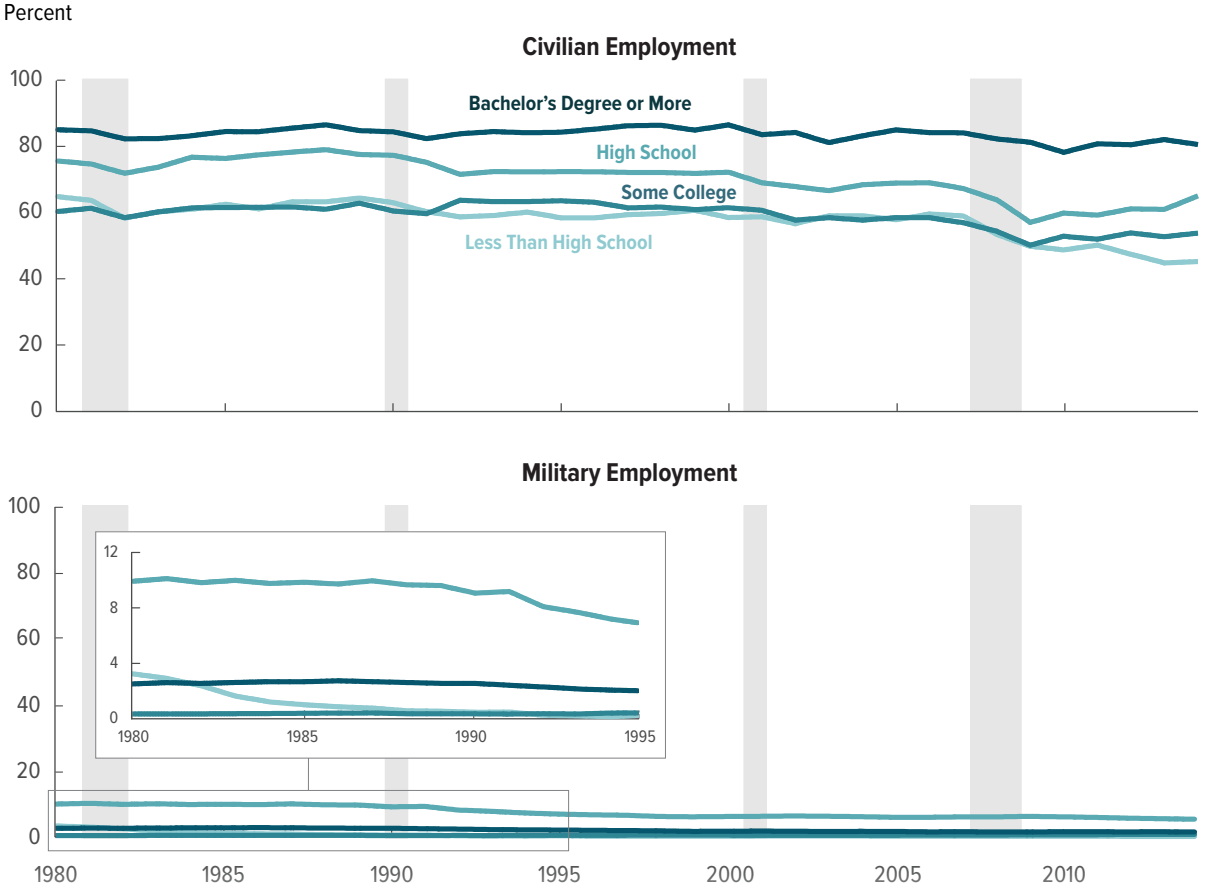


Another variant.

Congressional Budget Office, *The 2019 Long-Term Budget Outlook* (June 2019), p. 42, www.cbo.gov/publication/55331.

Line Graph, IV

Share of Young Men With Various Levels of Education Who Were Employed Civilians or in the Military



If the lines in a graph are difficult to distinguish, consider adding an inset.

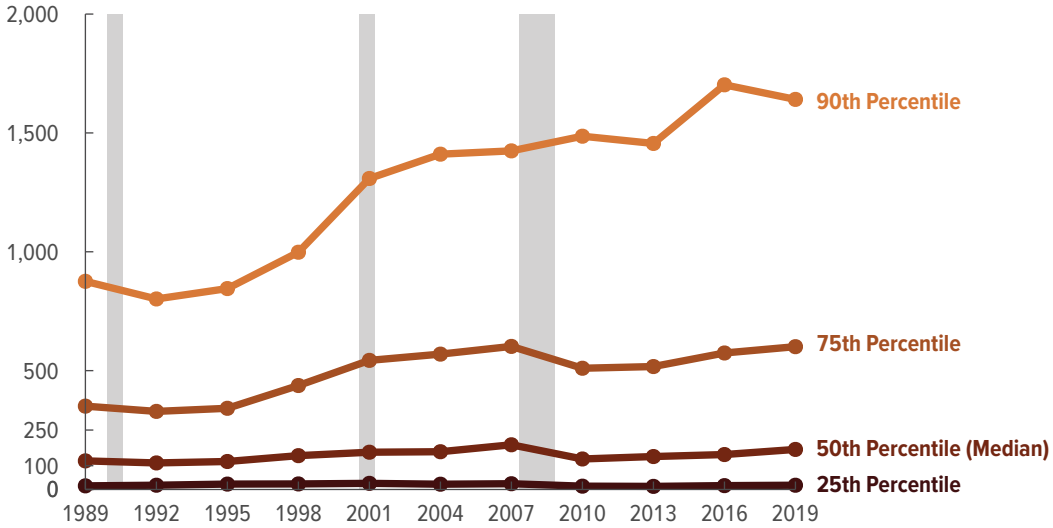
Another way of making lines more distinct is to reduce the scale of the y-axis; in this case, however, CBO wanted to keep the bottom panel consistent with the top panel. (A possible alternative when changes would be difficult or impossible to see is to "break" the y-axis just above zero and begin that axis with a value closer to the lowest data point; but choose that approach cautiously because a zero baseline can be meaningful.)

Congressional Budget Office, *Trends in the Joblessness and Incarceration of Young Men* (May 2016), p. 11, www.cbo.gov/publication/51495.

Line Graph, V

Wealth of Families at Selected Percentiles of the Distribution

Thousands of 2019 Dollars



In 1989, the ratio of the wealth of the family at the 90th percentile to that of the family at the median was 7.3 to 1. In 2007, that ratio grew to 7.6 to 1, and in 2019, it rose to 9.7 to 1.

Although CBO's line graphs usually do not include dots to mark every data point, they may be helpful when it is important to discern the data points or clarify that the lines do not themselves represent data. Another option in such cases is a bar graph (see pages 6 and 7). Dots should not be used if they would clutter the graph.

Congressional Budget Office, *Trends in the Distribution of Family Wealth, 1989 to 2019* (September 2022), p. 7, www.cbo.gov/publication/57598.

Bar Graph (Horizontal)

Changes in Projected Outlays From 2020 to 2030

Percentage of GDP

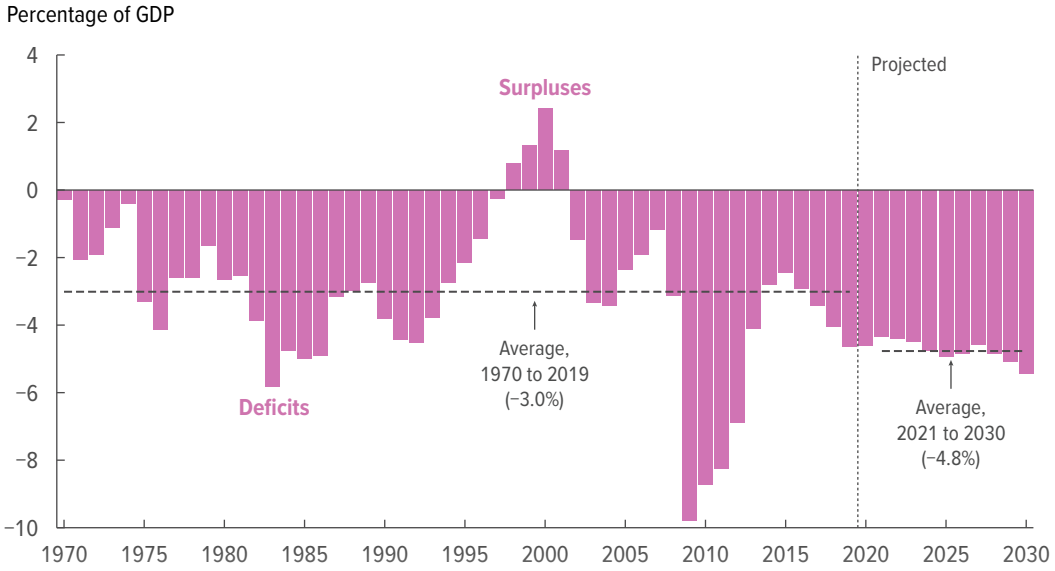
	Outlays		Change (Percentage points)	Major Reasons for Change
	2020	2030		
Social Security	4.9	6.0	1.1	Aging of the population
Major Health Care Programs[a]	5.4	7.0	1.6	Aging of the population; rising costs of health care
Other Mandatory Spending	2.6	2.2	−0.4	Inflation rate is less than nominal GDP growth
Discretionary Spending	6.4	5.6	−0.8	Caps on funding; inflation rate is less than nominal GDP growth
Net Interest	1.7	2.6	0.8	Accumulating debt; rising interest rates

It can be hard to decide when to use a bar graph and when to use a line graph. Here the choice of a horizontal bar graph was easy because there were just a few data points (beginning and ending values) to illustrate, and the author wanted to say more about the data than could fit under vertical bars.

Congressional Budget Office, *The Budget and Economic Outlook: 2020 to 2030* (January 2020), p. 20, www.cbo.gov/publication/56020.

Bar Graph (Vertical)

Total Deficits and Surpluses

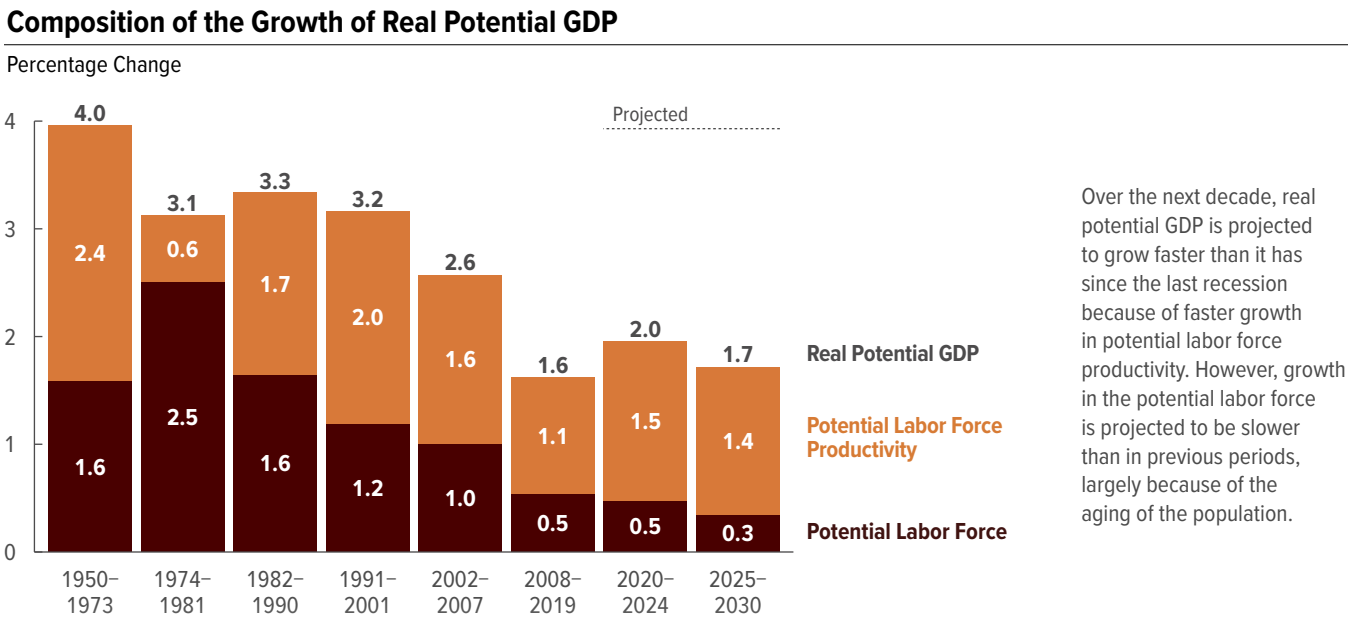


Deficits as a percentage of GDP are projected to rise from 4.6 percent in 2020 to 5.4 percent in 2030. They exceed their 50-year average throughout that period.

But as this example shows, bar graphs can be useful for showing many data points—work that is often performed by line graphs.

Congressional Budget Office, *The Budget and Economic Outlook: 2020 to 2030* (January 2020), p. 6, www.cbo.gov/publication/56020.

Segmented Bar Graph, I



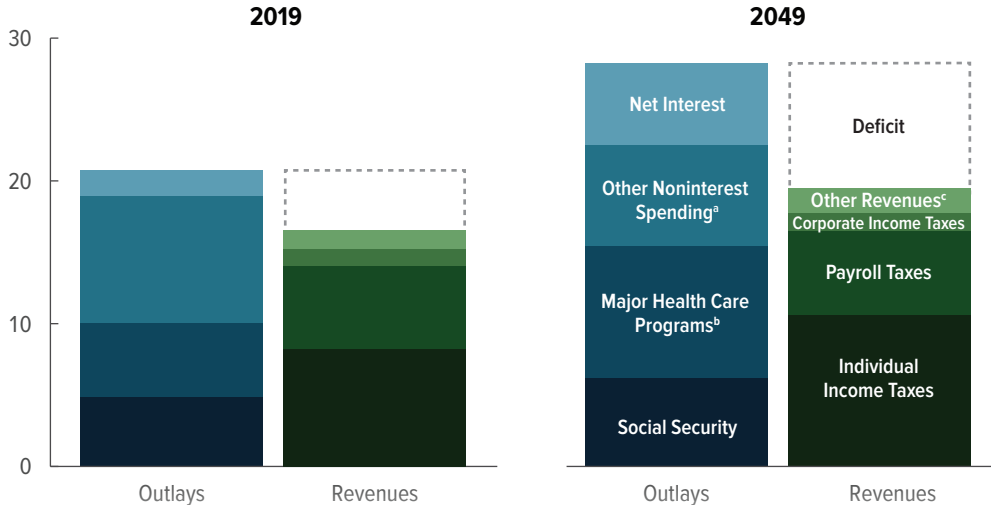
Like line graphs, some segmented bar graphs show value labels, . . .

Congressional Budget Office, *The Budget and Economic Outlook: 2020 to 2030* (January 2020), p. 47, www.cbo.gov/publication/56020.

Segmented Bar Graph, II

The Federal Budget in 2019 and 2049

Percentage of Gross Domestic Product

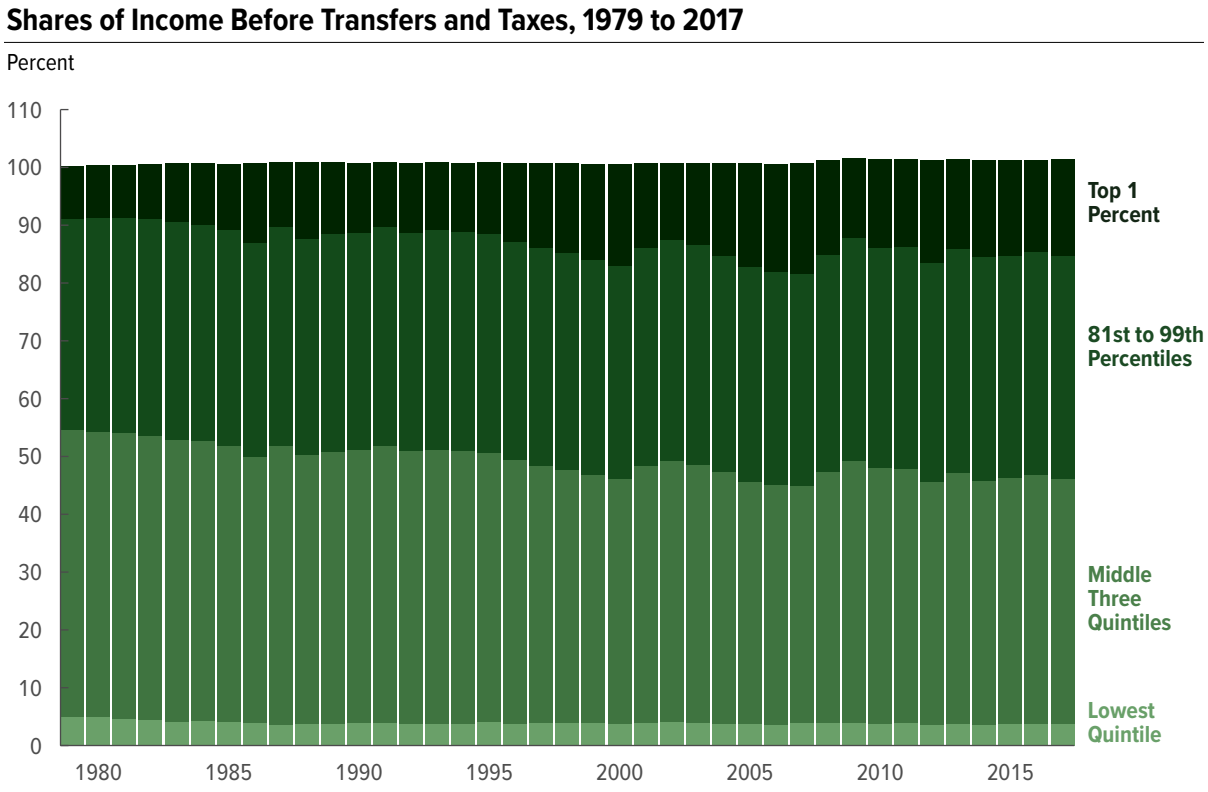


If current laws generally remained unchanged, spending would grow faster than revenues over the next 30 years, causing deficits to increase substantially.

. . . and others do not. There is no single correct approach.

Congressional Budget Office, *The 2019 Long-Term Budget Outlook* (June 2019), p. 8, www.cbo.gov/publication/55331.

Segmented Bar Graph, III

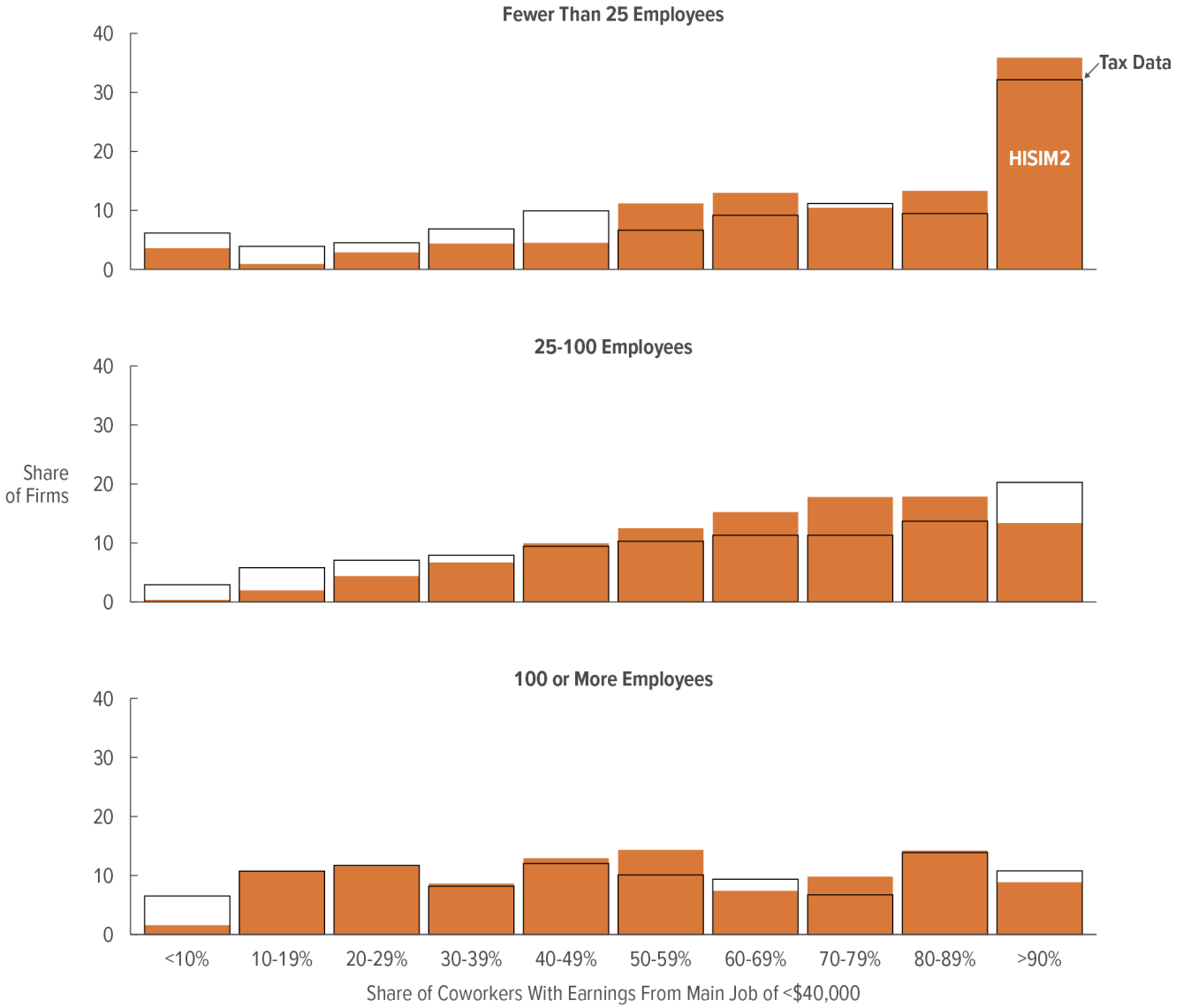


Add enough values, and a segmented bar graph becomes similar to a stacked area chart (see page 17).

Congressional Budget Office, *The Distribution of Household Income, 2017* (October 2020), p. 11, www.cbo.gov/publication/56575.

Target vs. Actual Bar Graph

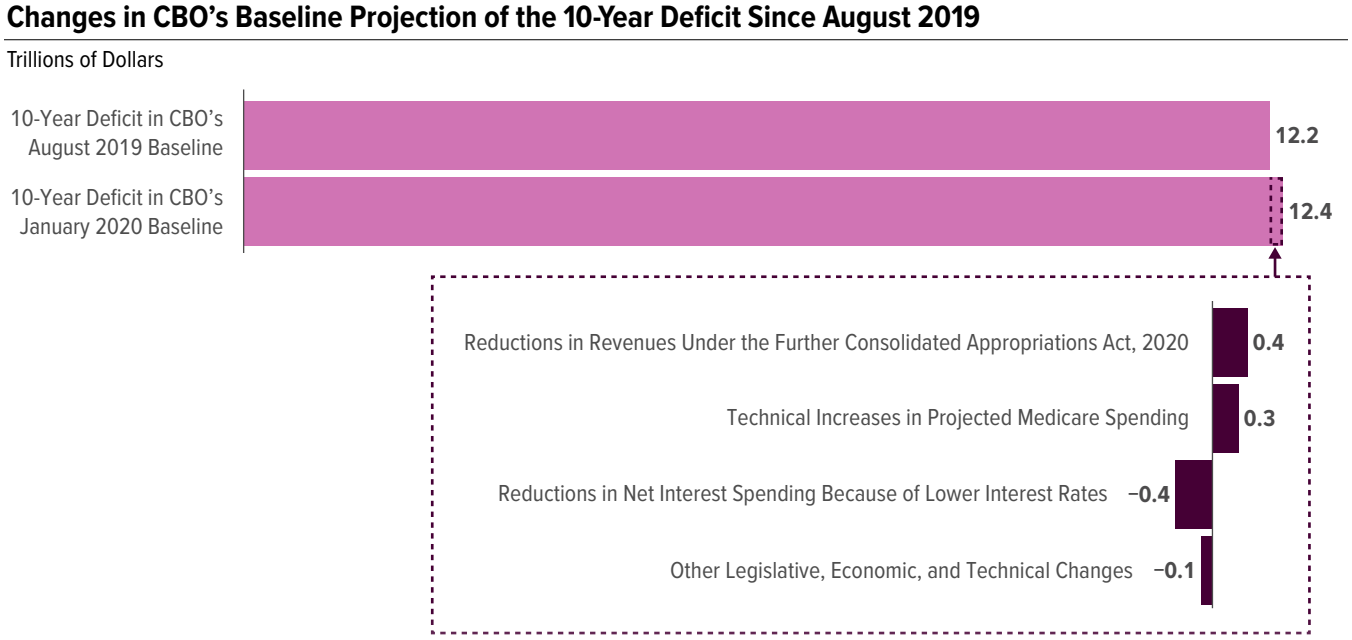
Share of Coworkers With Earnings of Less Than $40,000 in Different-Sized Firms in HISIM2 and Tax Data, 2017



Sometimes in a bar chart, it is useful to superimpose two series rather than group them side by side. Consider doing so when one series is serving as a reference, the way real-world tax data do in the example above.

Lucas Goodman and others, *Data and Methods for Constructing Synthetic Firms in CBO's Health Insurance Simulation Model, HISIM2*, Working Paper 2021-15 (Congressional Budget Office, December 2021), p. 32, www.cbo.gov/publication/57431.

Nested Bar Graph

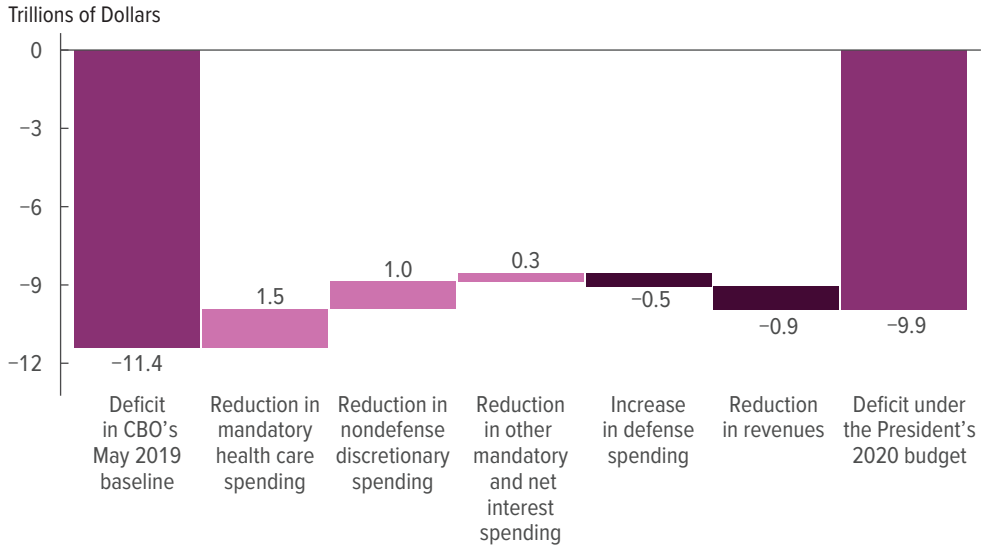


Here, the smaller bar graph breaks down the difference shown in the larger one, . . .

Congressional Budget Office, *The Budget and Economic Outlook: 2020 to 2030* (January 2020), p. 62, www.cbo.gov/publication/56020.

Waterfall Chart

Sources of Differences Between CBO's Estimates of 10-Year Budget Deficits in the May 2019 Baseline and Under the President's 2020 Budget



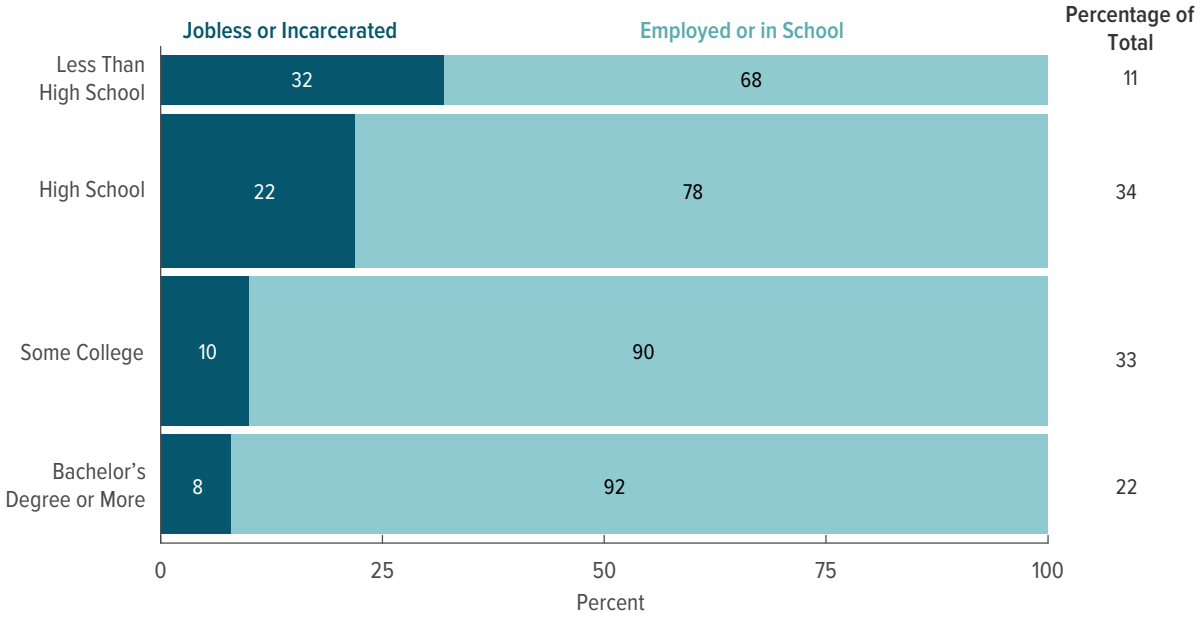
The President's budget would lower the cumulative deficit over the 2020–2029 period by significantly reducing outlays for health care and nondefense discretionary programs. Those reductions would be partially offset by increases in defense spending and a reduction in revenues.

. . . and this waterfall chart performs a similar function.

Congressional Budget Office, *An Analysis of the President's 2020 Budget* (May 2019), p. 6, www.cbo.gov/publication/55195.

Marimekko Chart, I

Status of Young Men, by Level of Education, 2014



Source: Congressional Budget Office, using data from the Census Bureau, the Bureau of Justice Statistics, and the Department of Defense.

People are counted as jobless if they are neither in school nor working, whether or not they are looking for work. People are counted as employed or in school whether they do those activities full time or part time.

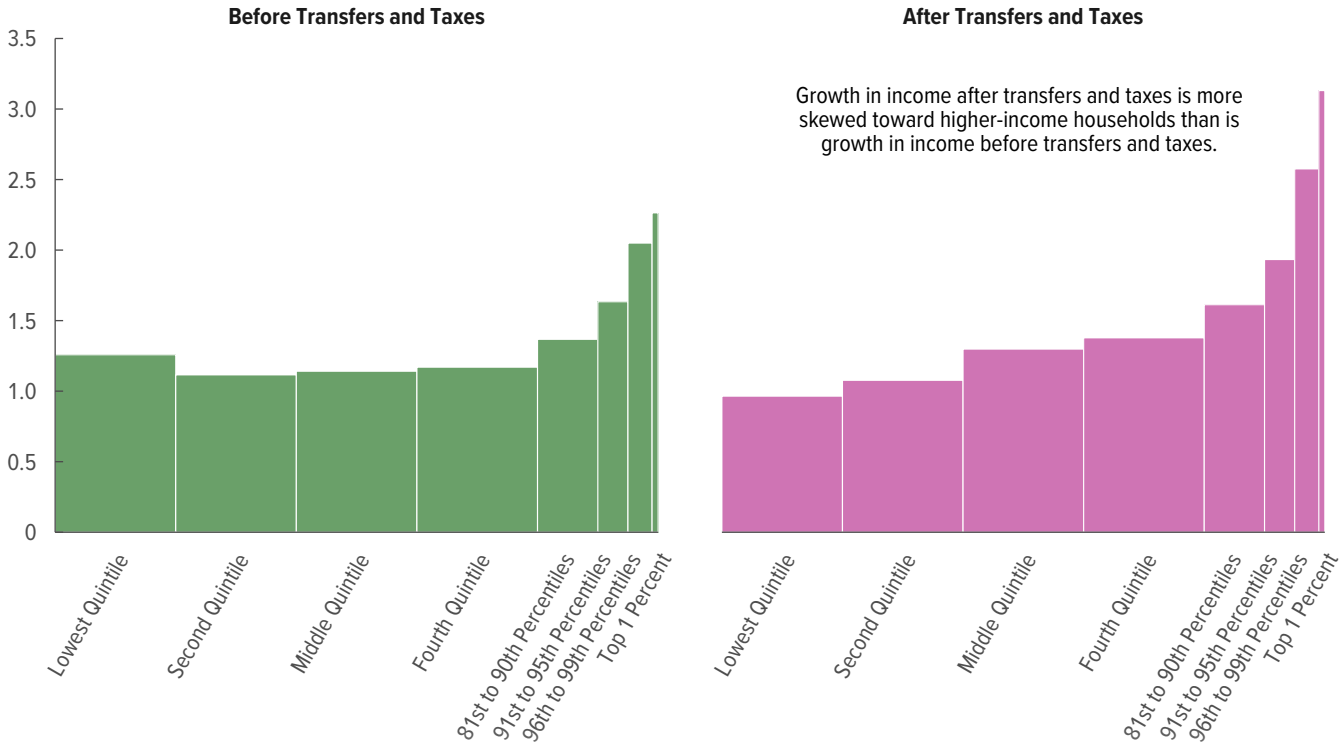
The height of the bars represents the share of young men in each education category.

Here is a way to add information about the size of various groups being analyzed. One drawback is that explaining how the chart works can be awkward. In this example, CBO resorted to using a note at the bottom, . . .

Congressional Budget Office, *Trends in the Joblessness and Incarceration of Young Men* (May 2016), p. 7, www.cbo.gov/publication/51495.

Marimekko Chart, II

Projected Average Annual Growth in Average Inflation-Adjusted Household Income, 2016 to 2021
Percent



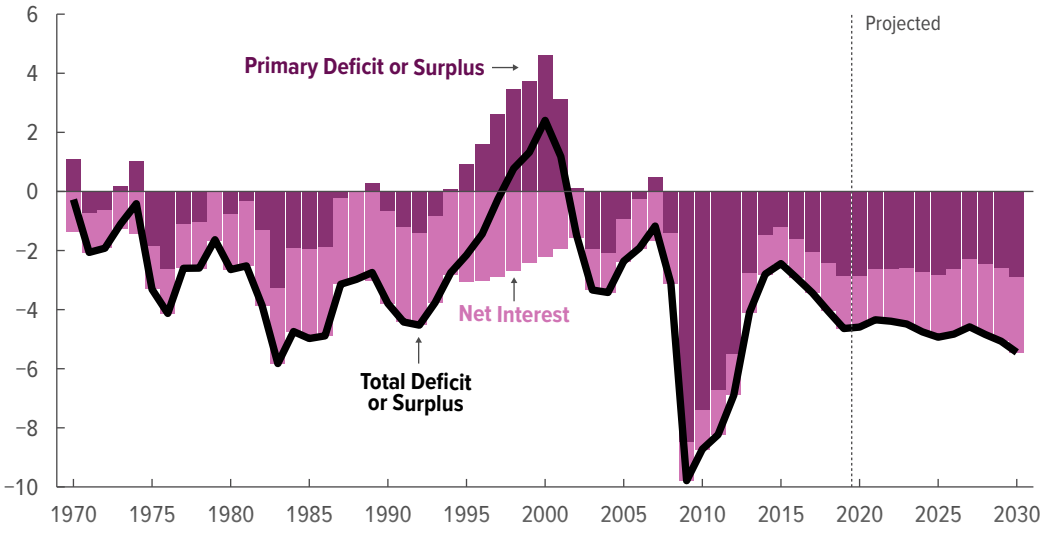
. . . but in this example, CBO omitted an explanatory note, thinking that the words "quintile" and "percentile" sufficiently explained the bars' varying widths.

Congressional Budget Office, *Projected Changes in the Distribution of Household Income, 2016 to 2021* (December 2019), p. 1, www.cbo.gov/publication/55941.

Combined Bar and Line Graph

Total Deficit, Primary Deficit, and Net Interest

Percentage of GDP



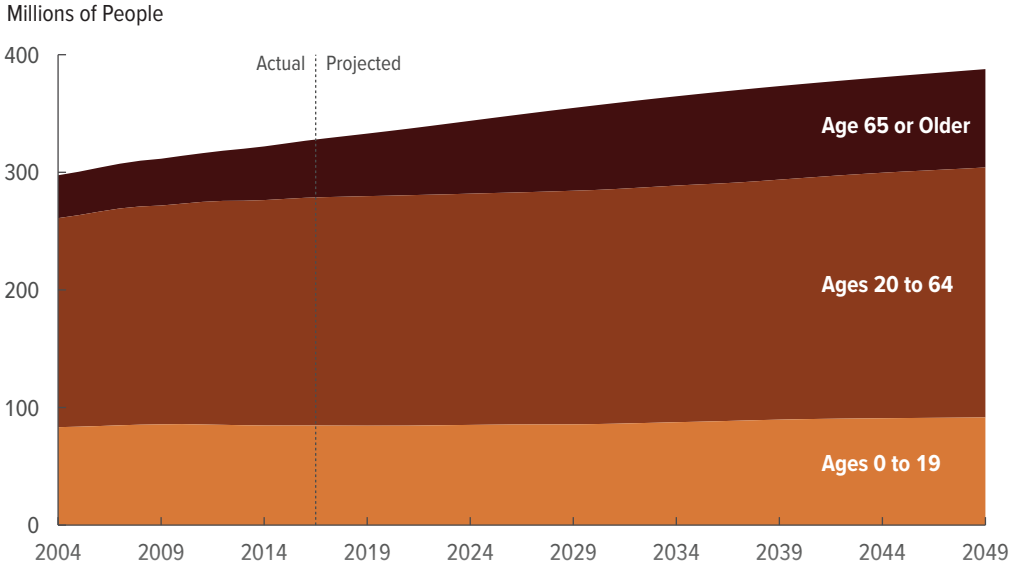
In CBO's projections, primary deficits fluctuate between 2.3 percent and 2.9 percent of GDP over the next decade, but total deficits grow because of rising interest costs.

This is a good way to show how a net value and its components change over time.

Congressional Budget Office, *The Budget and Economic Outlook: 2020 to 2030* (January 2020), p. 9, www.cbo.gov/publication/56020.

Stacked Area Chart

Population, by Age Group



The percentage of the population age 65 or older is projected to rise over the coming decades, maintaining a long-standing historical trend.

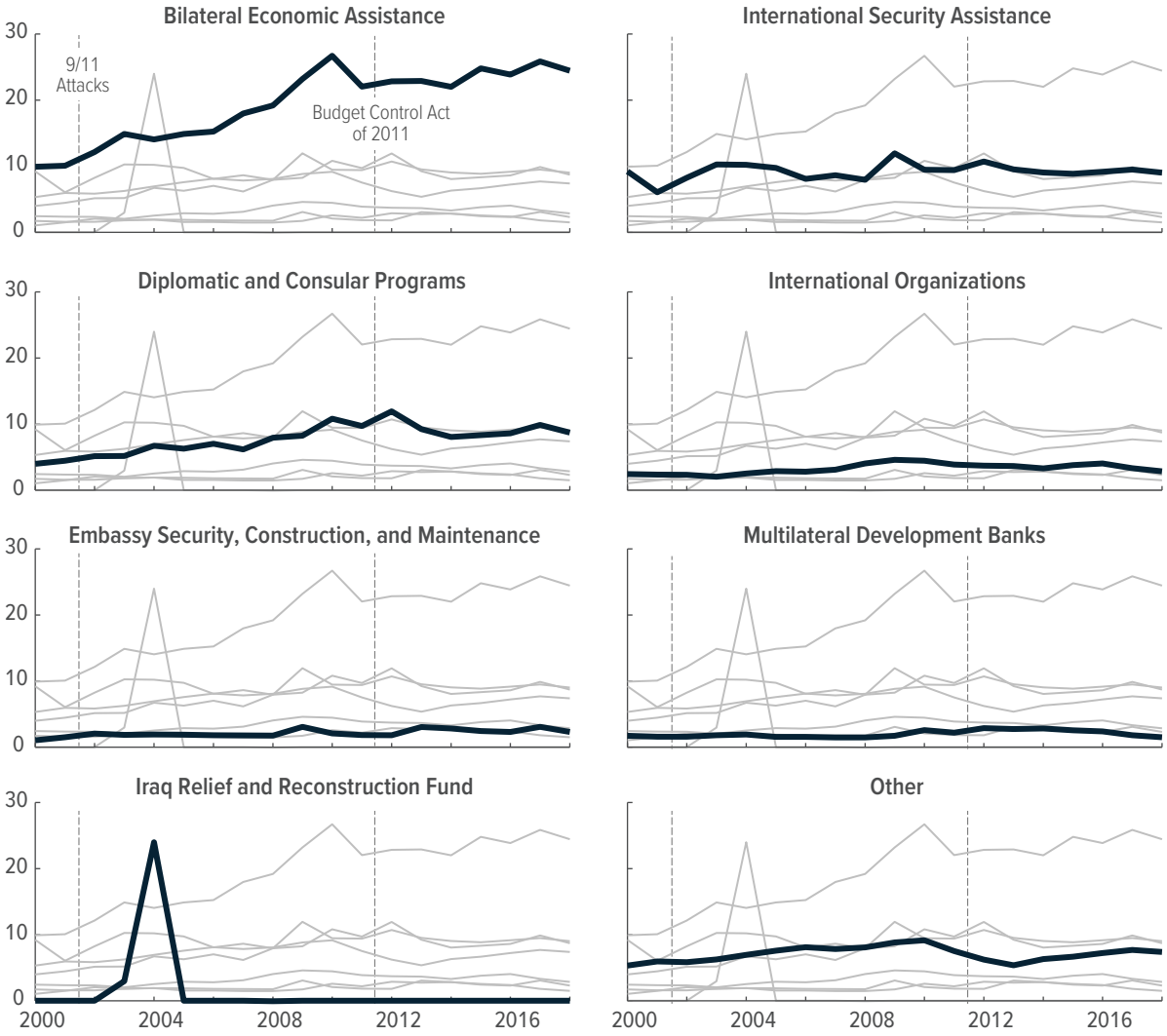
A stacked area chart is a popular way to show changes in several different components over time. One drawback is that the upper layers show distortions introduced by the lower layers. Another drawback is that if they contain many categories, stacked area charts can be hard to follow. To avoid those problems, . . .

Congressional Budget Office, *The 2019 Long-Term Budget Outlook* (June 2019), p. 15, www.cbo.gov/publication/55331.

Small Multiples, I

Appropriations for International Affairs Activities, by Budget Category, 2000 to 2018

Billions of 2018 Dollars

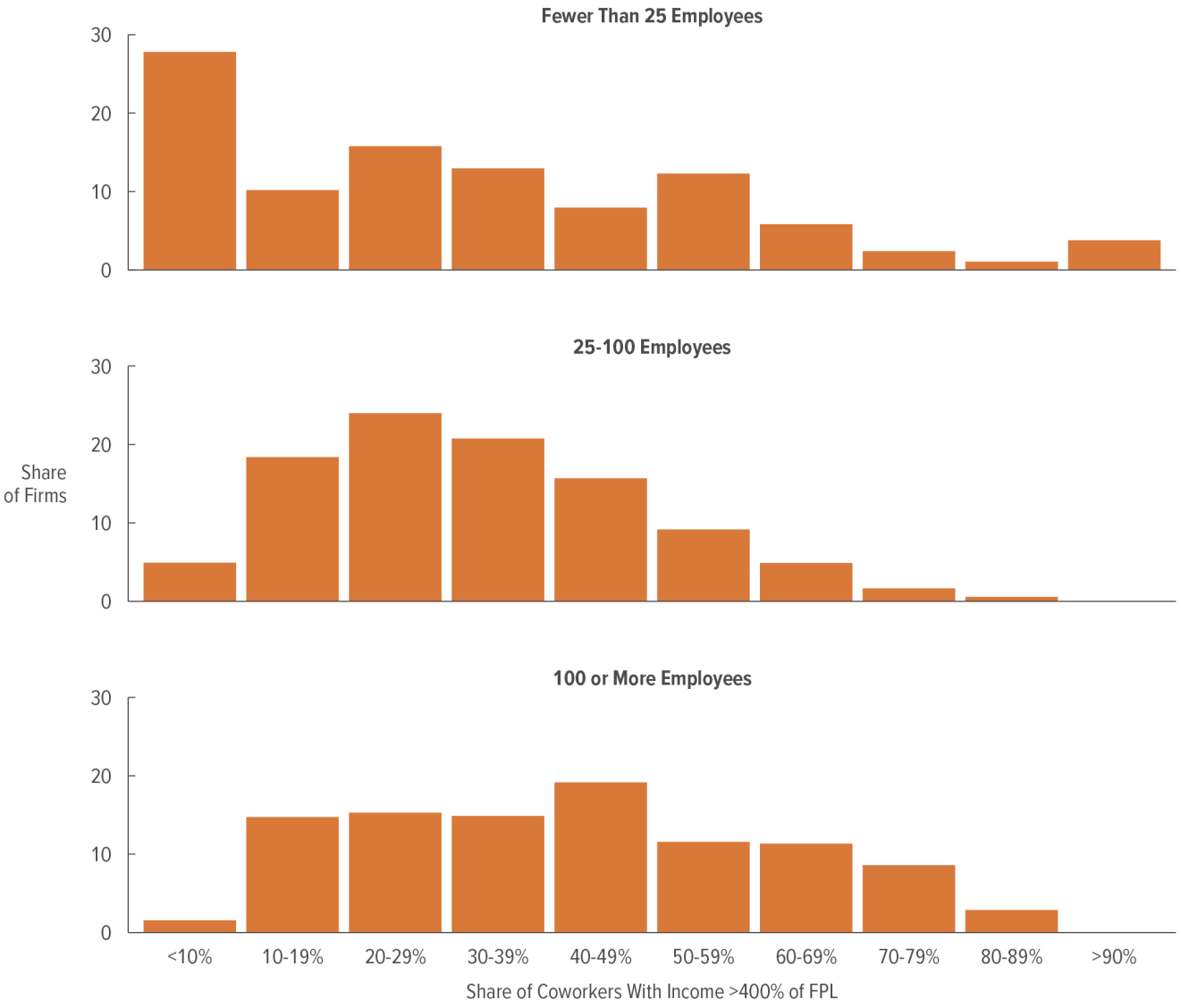


. . . consider using a small-multiples approach. With small multiples, one takes a variable from the data set (budget category, in this case) and makes a new chart for each discrete value.

Congressional Budget Office, *Funding for International Affairs Activities, Within and Outside Agencies' Base Budgets* (December 2018), p. 6, www.cbo.gov/publication/54848.

Small Multiples, II

Share of Coworkers With Income Greater Than 400 Percent of the FPL in Different-Sized Firms in HISIM2, 2017



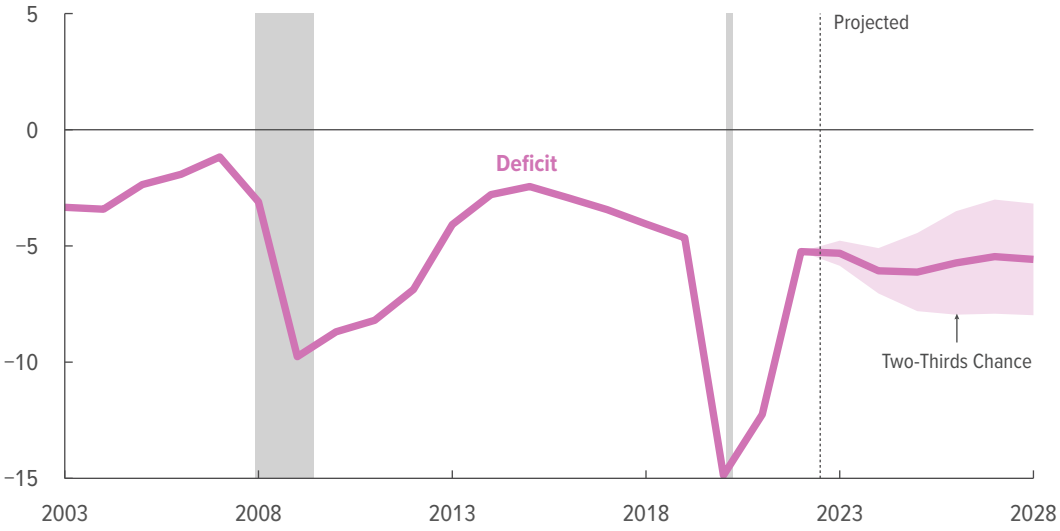
Small multiples are not just for disentangling line charts. Consider unstacking stacked bar charts. Any categorical variable in the data can be the basis of a multichart comparison.

Lucas Goodman and others, *Data and Methods for Constructing Synthetic Firms in CBO's Health Insurance Simulation Model, HISIM2*, Working Paper 2021-15 (Congressional Budget Office, December 2021), p. 36, www.cbo.gov/publication/57431.

Fan Chart

Uncertainty of CBO's Baseline Projections of the Budget Deficit

Percentage of GDP



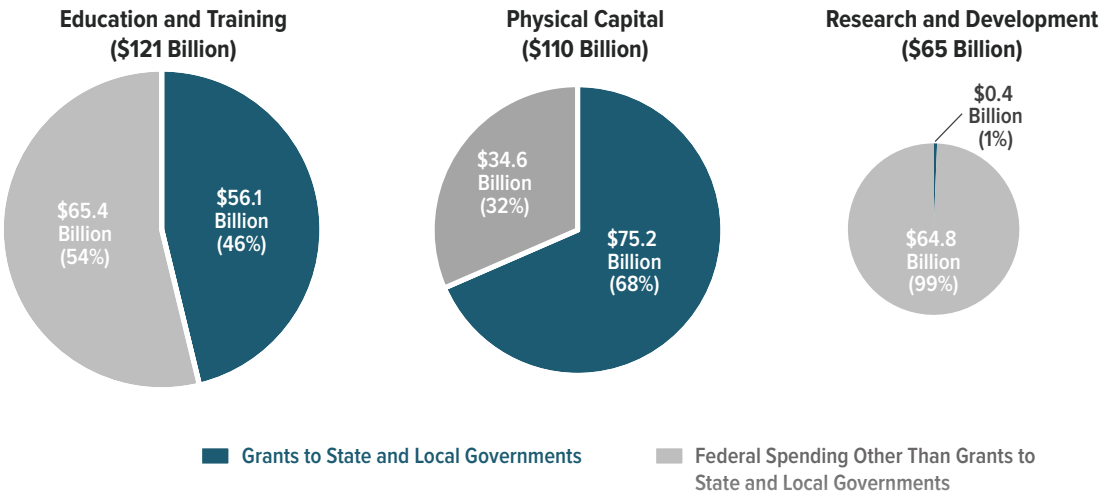
In CBO's baseline projections, the deficit in 2028 is 5.6 percent of GDP. The agency estimates that there is a roughly two-thirds chance that the deficit that year would be between 3.2 percent of GDP and 8.0 percent of GDP.

Fan charts are most often used to show a range of estimates.

Congressional Budget Office, *The Budget and Economic Outlook: 2023 to 2033* (February 2023), p. 31, www.cbo.gov/publication/58848.

Pie Chart

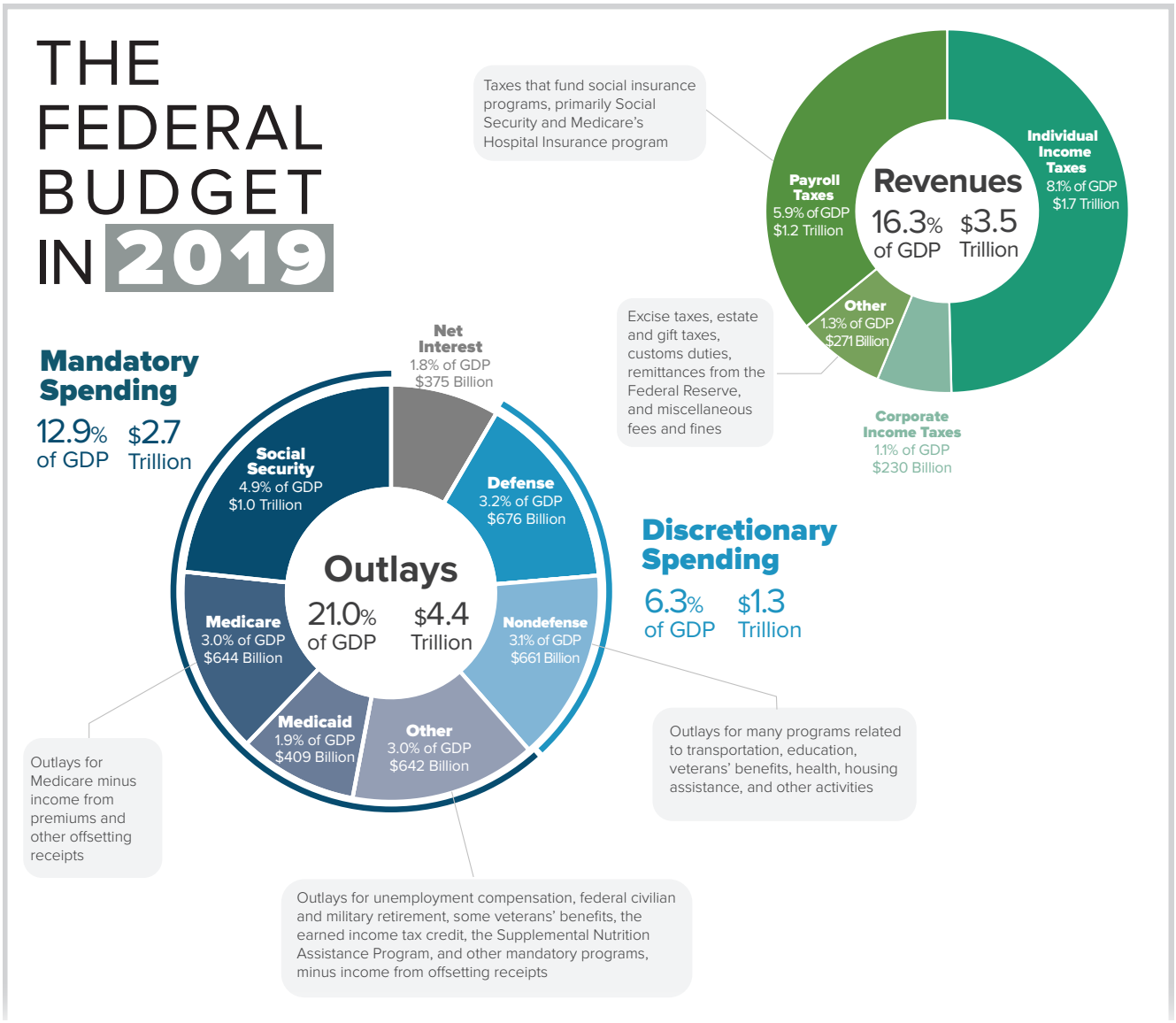
Share of Federal Nondefense Investment Provided as Grants to State and Local Governments, 2018



Pie charts have a bad reputation in some quarters. CBO has no objection to them, provided that they do not contain more than a few slices.

Congressional Budget Office, *Federal Investment, 1962 to 2018* (June 2019), p. 15, www.cbo.gov/publication/55375.

Doughnut Chart



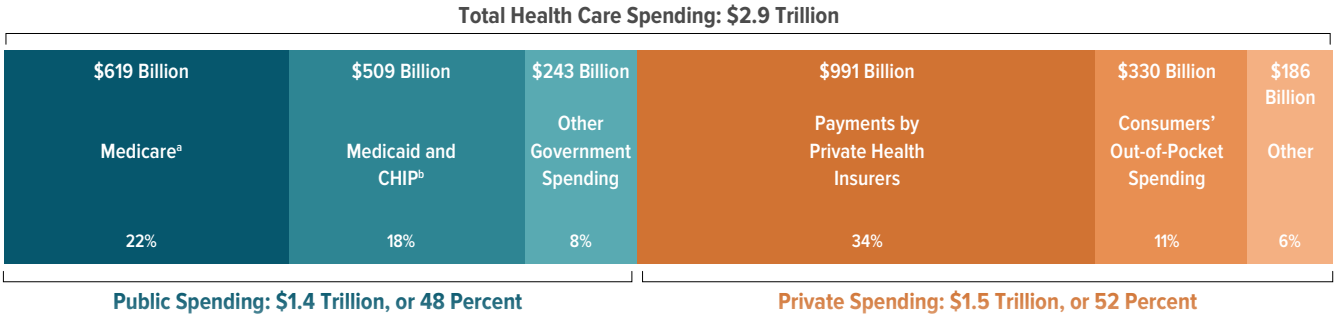
CBO is also not opposed to putting some text, such as a sum, in the middle of a pie chart and turning it into a doughnut—especially in less formal settings, such as this infographic.

Congressional Budget Office, *The Federal Budget in 2019: An Infographic* (April 2020), www.cbo.gov/publication/56324.

Segmented Bar Graph, IV

National Spending for Health Care, 2014

Total health care spending amounted to $2.9 trillion in calendar year 2014, about half of which was private spending. The federal government subsidizes a substantial part of that private spending, primarily through the tax exclusion for employment-based health insurance.



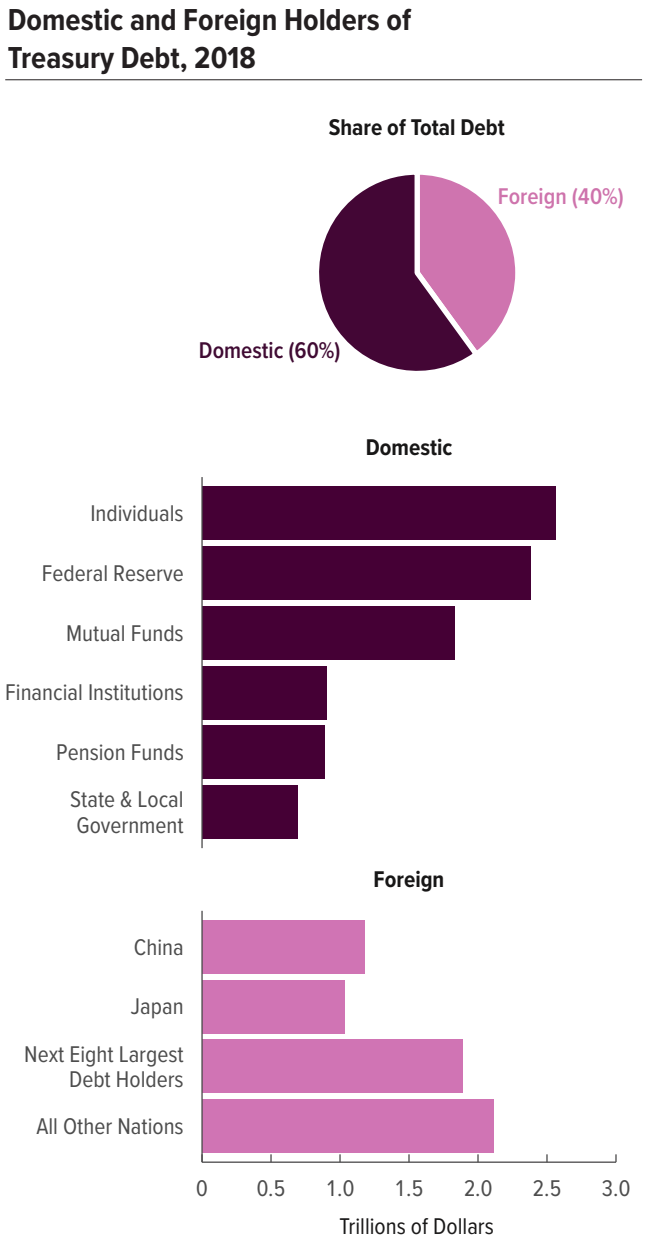
Another way to show parts of a whole is to divide a rectangle, rather than a circle, into pieces. Think of it as a segmented bar graph with just one bar.

An advantage over pie charts: Readers may find the size of the pieces easier to compare. A disadvantage: It is less quickly clear that the chart is showing parts of a whole.

Note that this chart and the doughnut chart both use outside brackets to communicate a second tier of information. Pie charts can do that, too.

Congressional Budget Office, *The 2016 Long-Term Budget Outlook* (July 2016), p. 33, www.cbo.gov/publication/51580.

Combined Pie Chart and Bar Graph



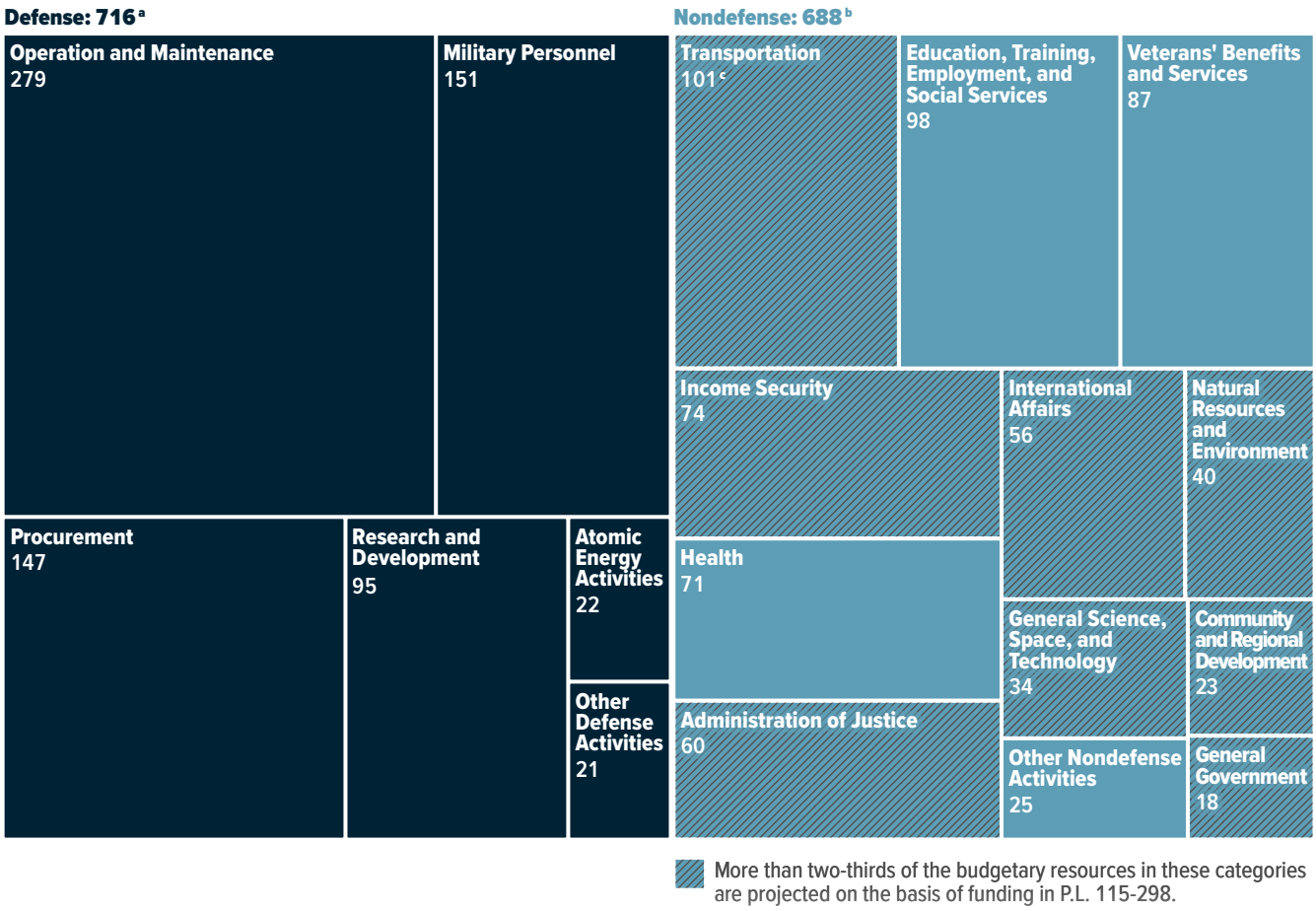
Here, that second tier of information is communicated by dividing the figure in two. The fact that the pie chart is not the same shape as the bar graphs communicates nicely that it is showing data of a different kind.

Congressional Budget Office, *The Budget and Economic Outlook: 2019 to 2029* (January 2019), p. 15, www.cbo.gov/publication/54918.

Treemap

Projected New Discretionary Budgetary Resources for Defense and Nondefense Activities in 2019

Billions of Dollars



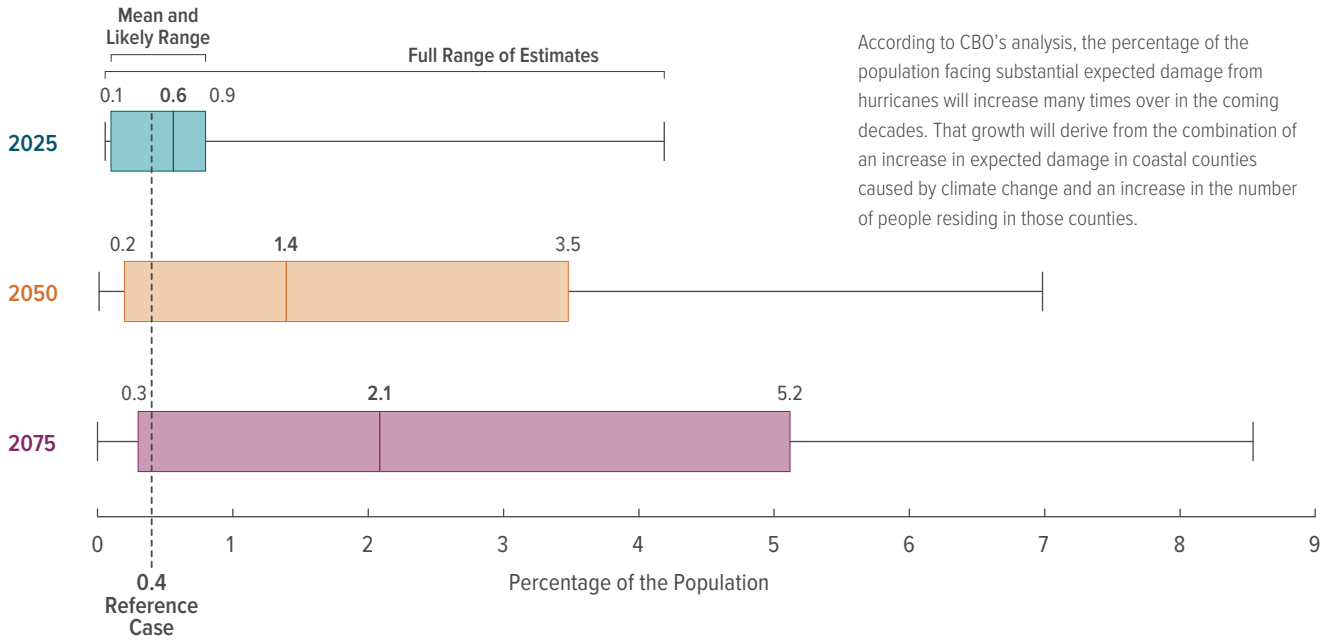
Treemaps are another way to show parts of a whole. As in the example "Segmented Bar Graph, IV," the area of each rectangle communicates how large its value is—but both the height and the width of the rectangles can vary.

As this example demonstrates, treemaps can accommodate many more data points than pie and doughnut charts can. Moreover, they can show data for subdivisions and nested categories.

Congressional Budget Office, *The Budget and Economic Outlook: 2019 to 2029* (January 2019), p. 82, www.cbo.gov/publication/54918.

Box Plot

Percentage of the U.S. Population Living in Counties With Substantial Expected Hurricane Damage in Selected Future Years



Box plots help compare the shapes of distributions. Five values commonly indicate the minimum, 25th percentile, median, 75th percentile, and maximum of a set of data. This variant works a little differently, as the labels and note explain.

CBO's publications should be clear to an audience of nonspecialists, so be sure to include nearby text to explain how a box plot works.

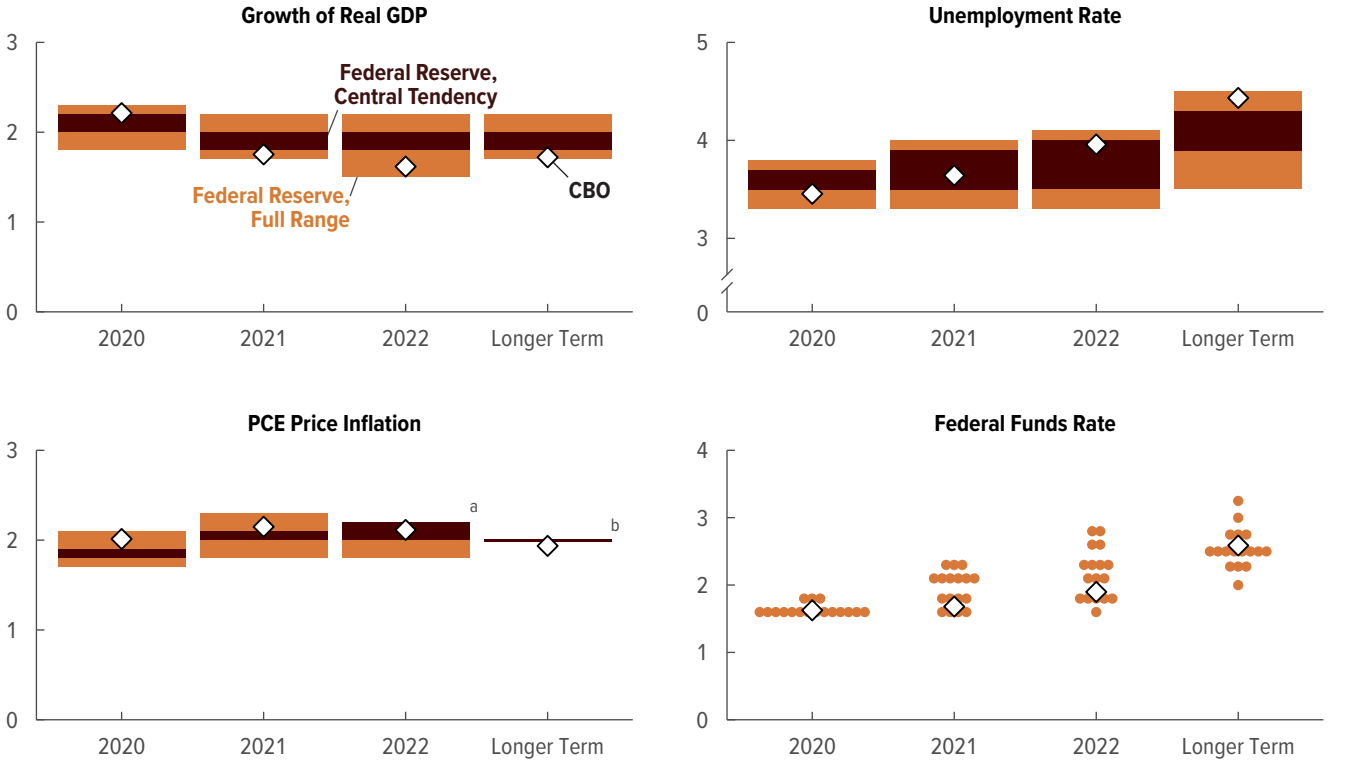
Congressional Budget Office, *Potential Increases in Hurricane Damage in the United States: Implications for the Federal Budget* (June 2016), p. 16, www.cbo.gov/publication/51518.

Modified Box Plot and Beeswarm

Comparison of CBO's Economic Projections With Those by Federal Reserve Officials

Compared with the forecasts made by Federal Reserve officials, CBO's projections suggest a slightly stronger outlook for 2020 but a slightly weaker outlook for 2021, 2022, and the longer term.

Percent



The full range of forecasts from the Federal Reserve is based on the highest and lowest of the 17 projections by the Board of Governors and the presidents of the Federal Reserve Banks. (One Federal Reserve official did not submit longer-run projections for the change in real GDP, the unemployment rate, or the federal funds rate.) The central tendency is, roughly speaking, the middle two-thirds of the full range, formed by removing the three highest and three lowest projections.

• • • • •

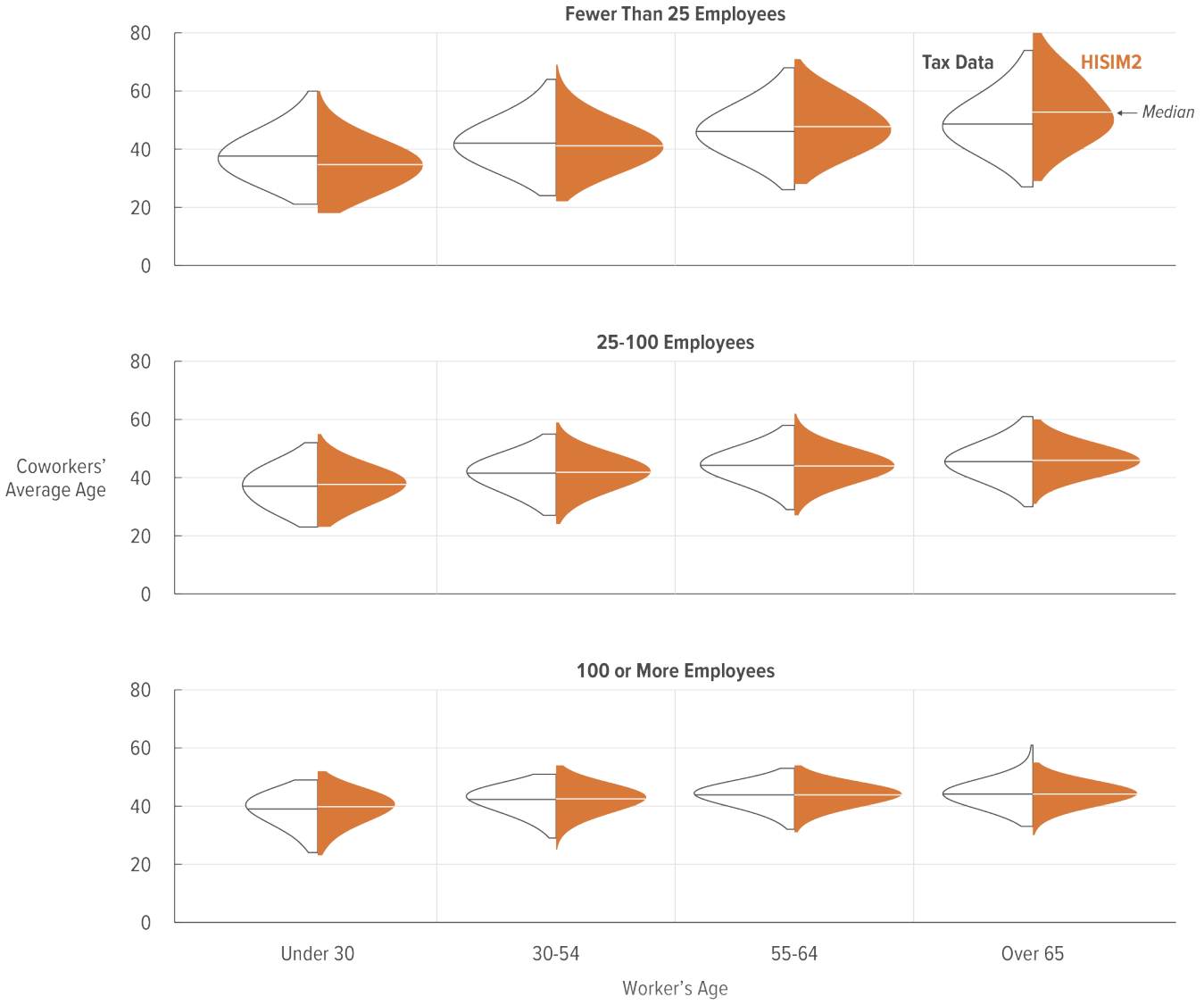
Each of the data points for the federal funds rate represents a forecast made by one of the members of the Federal Reserve Board or one of the presidents of the Federal Reserve Banks in December 2019. The Federal Reserve officials' forecasts of the federal funds rate are for the rate at the end of the year, whereas CBO's forecasts are fourth-quarter values.

This figure shows distributions in two more ways. A possible drawback is that the reader depends on the notes to explain much of what is going on.

Congressional Budget Office, *The Budget and Economic Outlook: 2020 to 2030* (January 2020), p. 59, www.cbo.gov/publication/56020.

Violin Plot

Distribution of Coworkers' Average Age, by Worker's Age, in Different-Sized Firms in HISIM2 and Tax Data, 2017

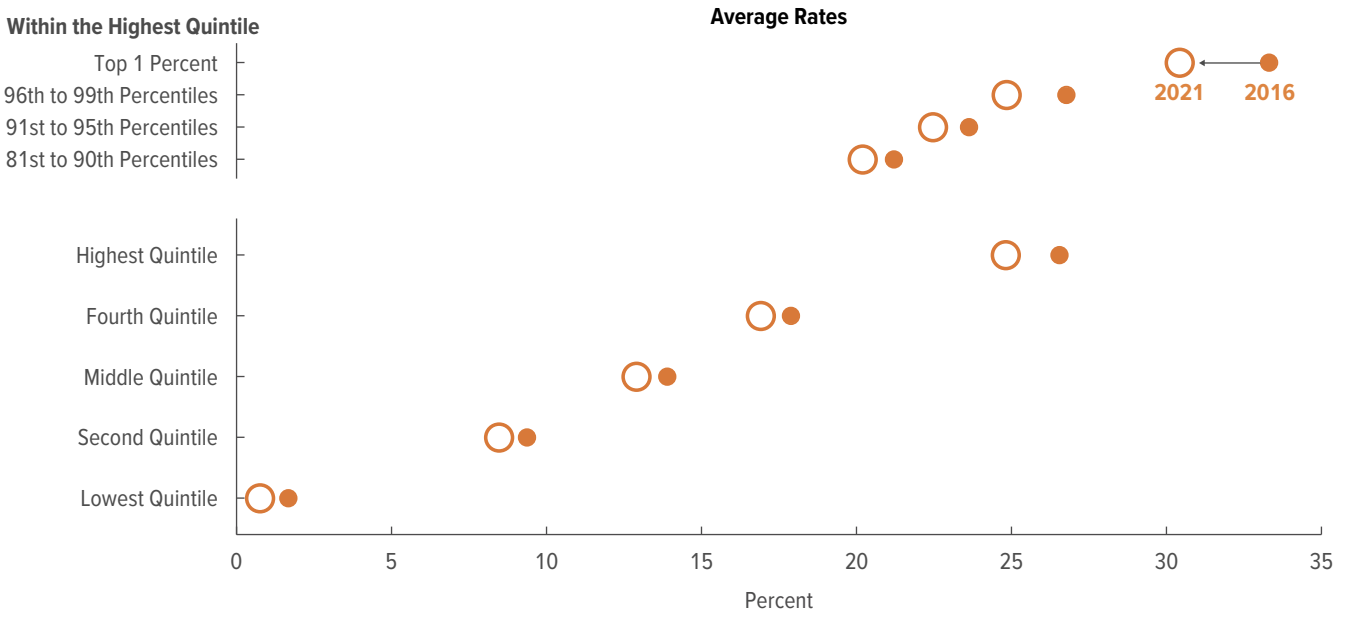


A violin plot is like a box plot, but it visualizes a whole distribution as a contour. The width of the shape represents the probability density at different values, smoothed. The example above compares two different series in side-by-side contours.

Lucas Goodman and others, *Data and Methods for Constructing Synthetic Firms in CBO's Health Insurance Simulation Model, HISIM2*, Working Paper 2021-15 (Congressional Budget Office, December 2021), p. 25, www.cbo.gov/publication/57431.

Dot Plot

Average Federal Tax Rates, by Income Group, 2016 and 2021

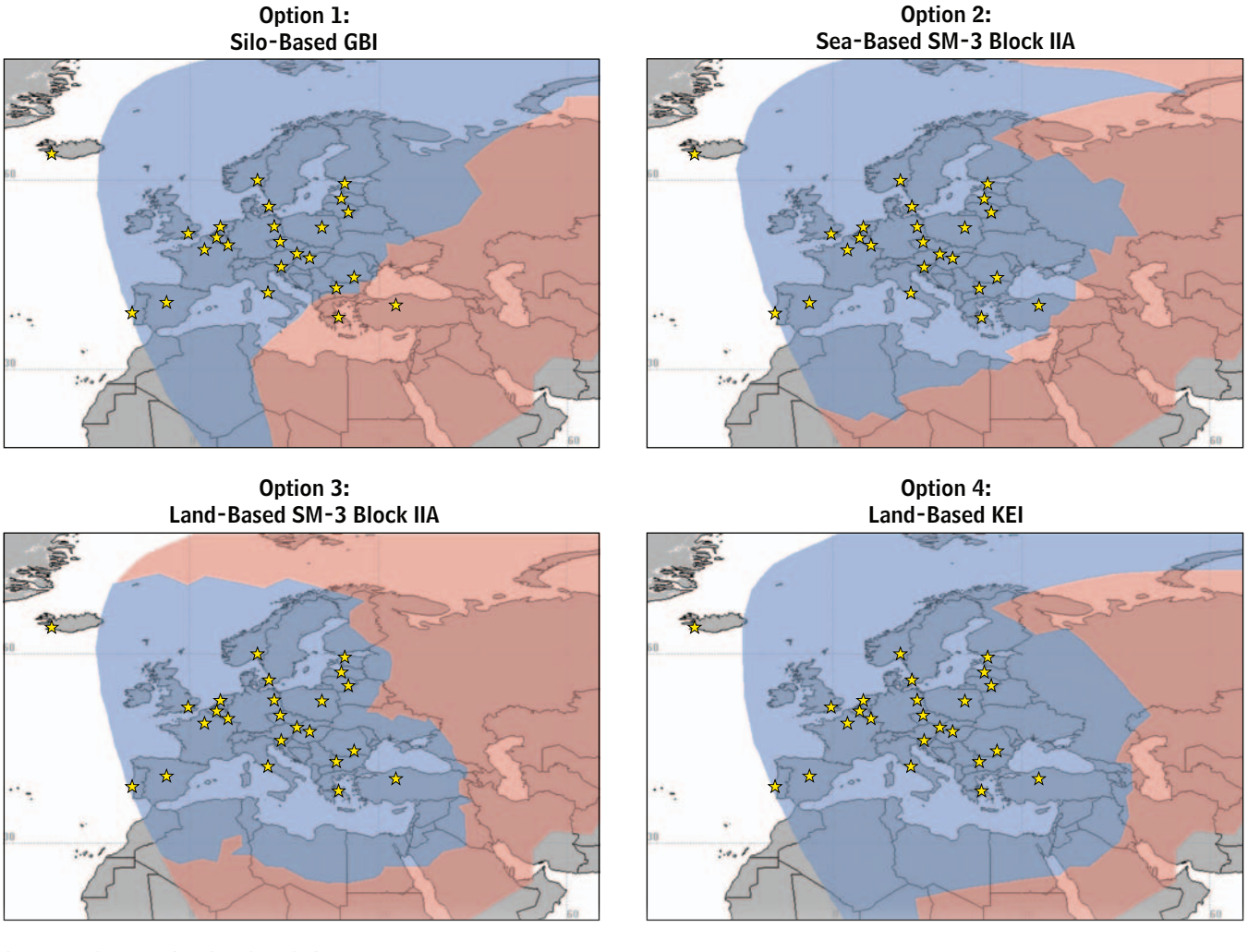


A dot plot works in some instances when a paired bar graph might be cumbersome.

Congressional Budget Office, *Projected Changes in the Distribution of Household Income, 2016 to 2021* (December 2019), p. 21, www.cbo.gov/publication/55941.

Map, I

Areas Defended by the Missile Defense Options Against IRBMs from Iran



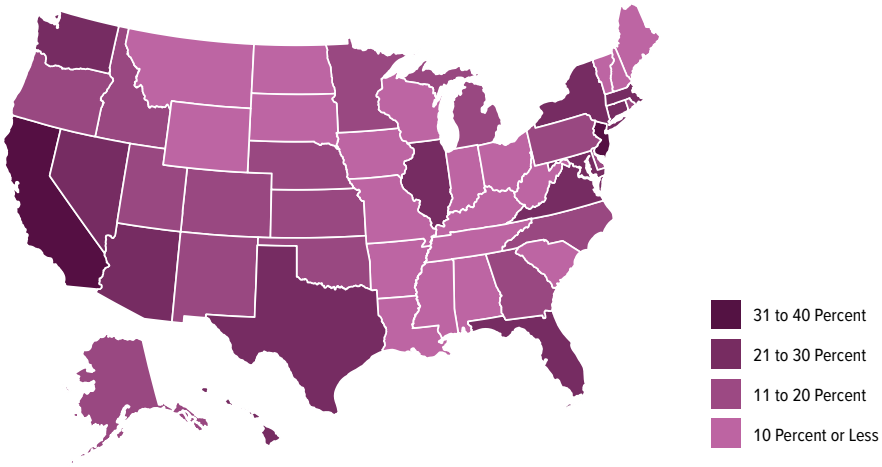
CBO can make maps like these from precise geographical data, rather than from less precise freehand drawings.

The "locator" maps on this page show national borders for reference, but the data being charted are not contiguous with those borders.

Congressional Budget Office, *Options for Deploying Missile Defenses in Europe* (February 2009), p. xix, www.cbo.gov/publication/41165.

Map, II

Foreign-Born People Ages 25 to 54, by Percentage of State Population, 2018

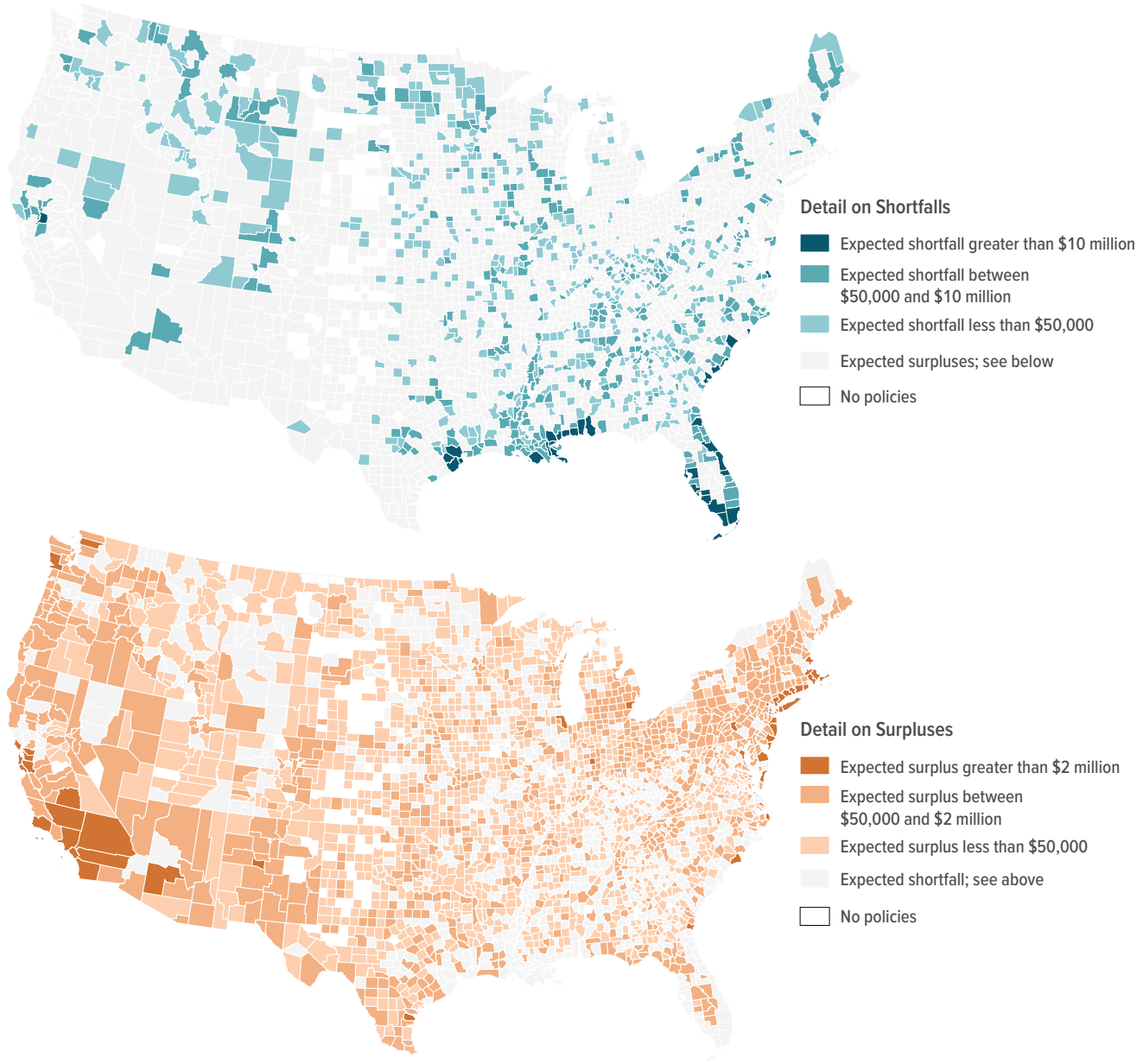


These two “choropleth” maps, by contrast, show data within predetermined areas, in this case, the borders of states, . . .

Congressional Budget Office, *The Employment of Foreign-Born People* (June 2020), p. 7, www.cbo.gov/publication/56357.

Map, III

NFIP Expected Shortfalls and Surpluses, by County



. . . and in this case, the borders of counties.

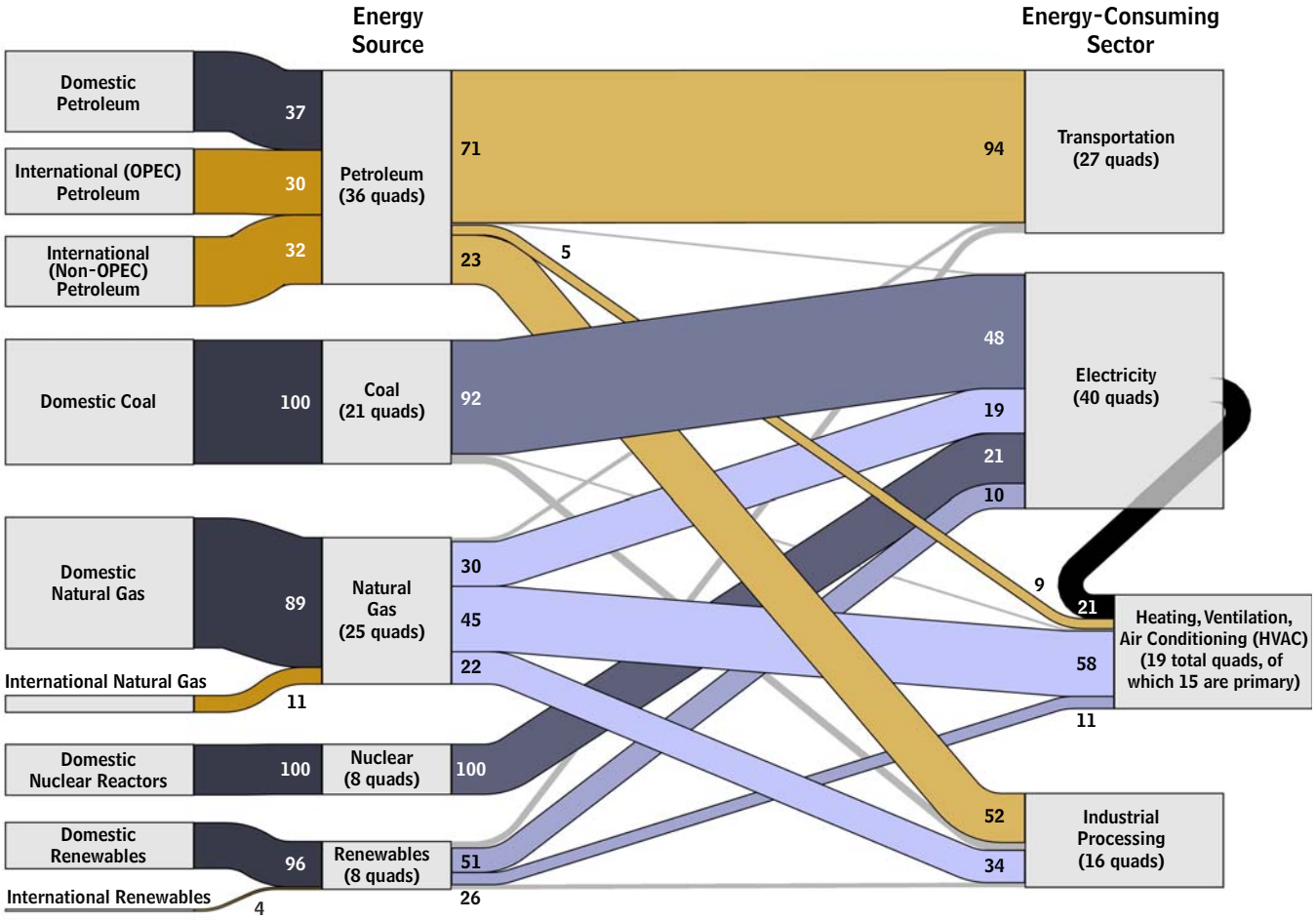
Be warned that this map gives a better sense of geography than of population, because so much of the U.S. population is concentrated in cities.

Congressional Budget Office, *The National Flood Insurance Program: Financial Soundness and Affordability* (September 2017), p. 14, www.cbo.gov/publication/53028.

Sankey Diagram, I

Energy Flows, by Source of Energy and Energy-Consuming Sector, 2010

(Percent)

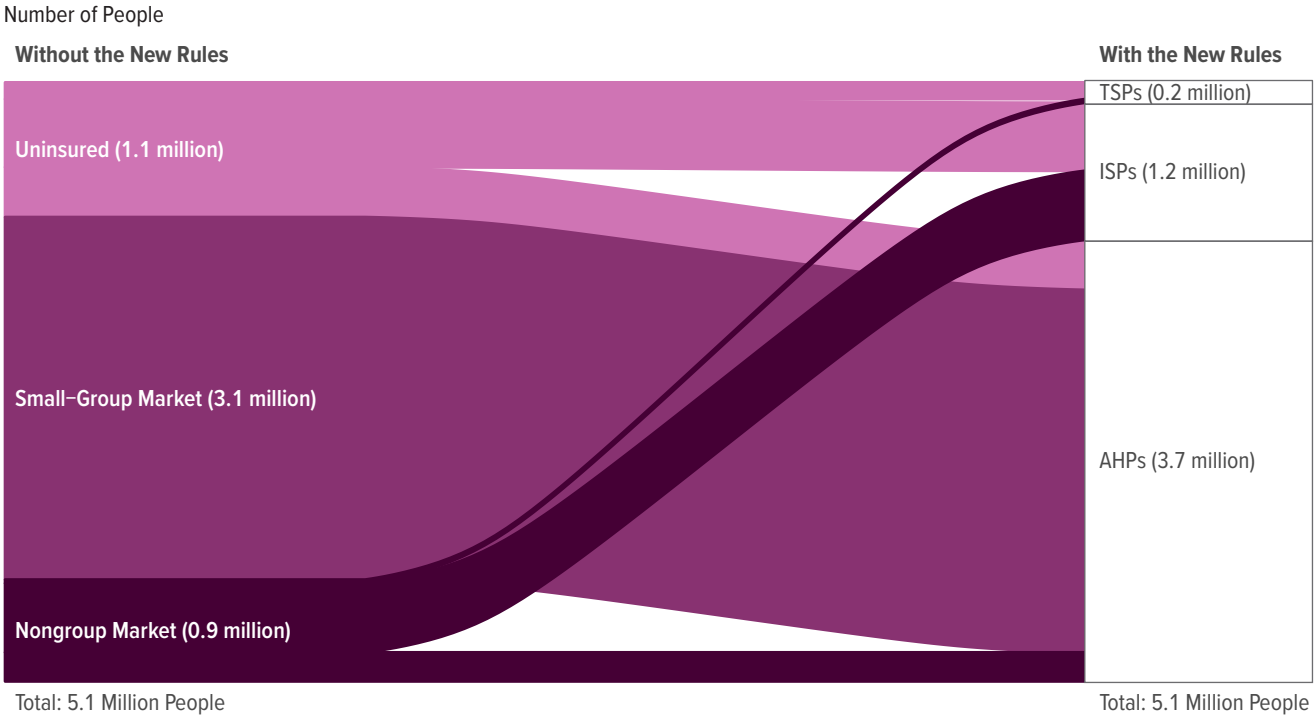


Sankey diagrams are used to show flows.

Congressional Budget Office, *Energy Security in the United States* (May 2012), p. 3, www.cbo.gov/publication/43012.

Sankey Diagram, II

Estimated Average Annual Enrollment of People Who Are Projected to Change Their Insurance Coverage Because of the New Rules for AHPs and Short-Term Plans, 2019 to 2028

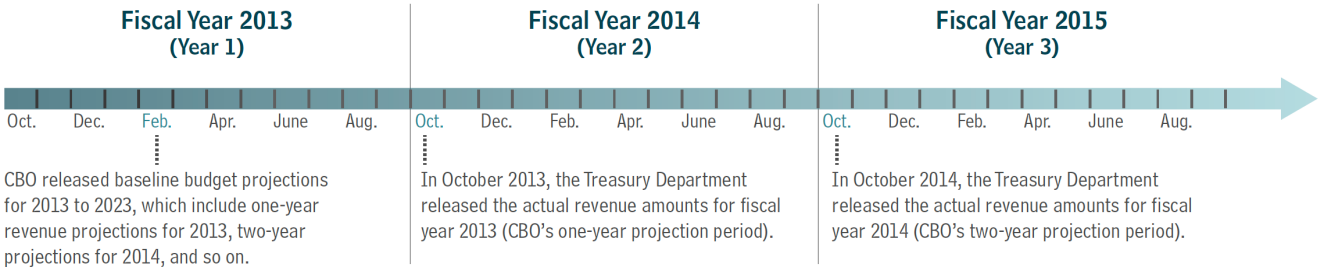


Another one.

Congressional Budget Office, *How CBO and JCT Analyzed Coverage Effects of New Rules for Association Health Plans and Short-Term Plans* (January 2019), p. 8, www.cbo.gov/publication/54915.

Timeline

A Timeline for Measuring the Forecast Errors of CBO's Revenue Projections

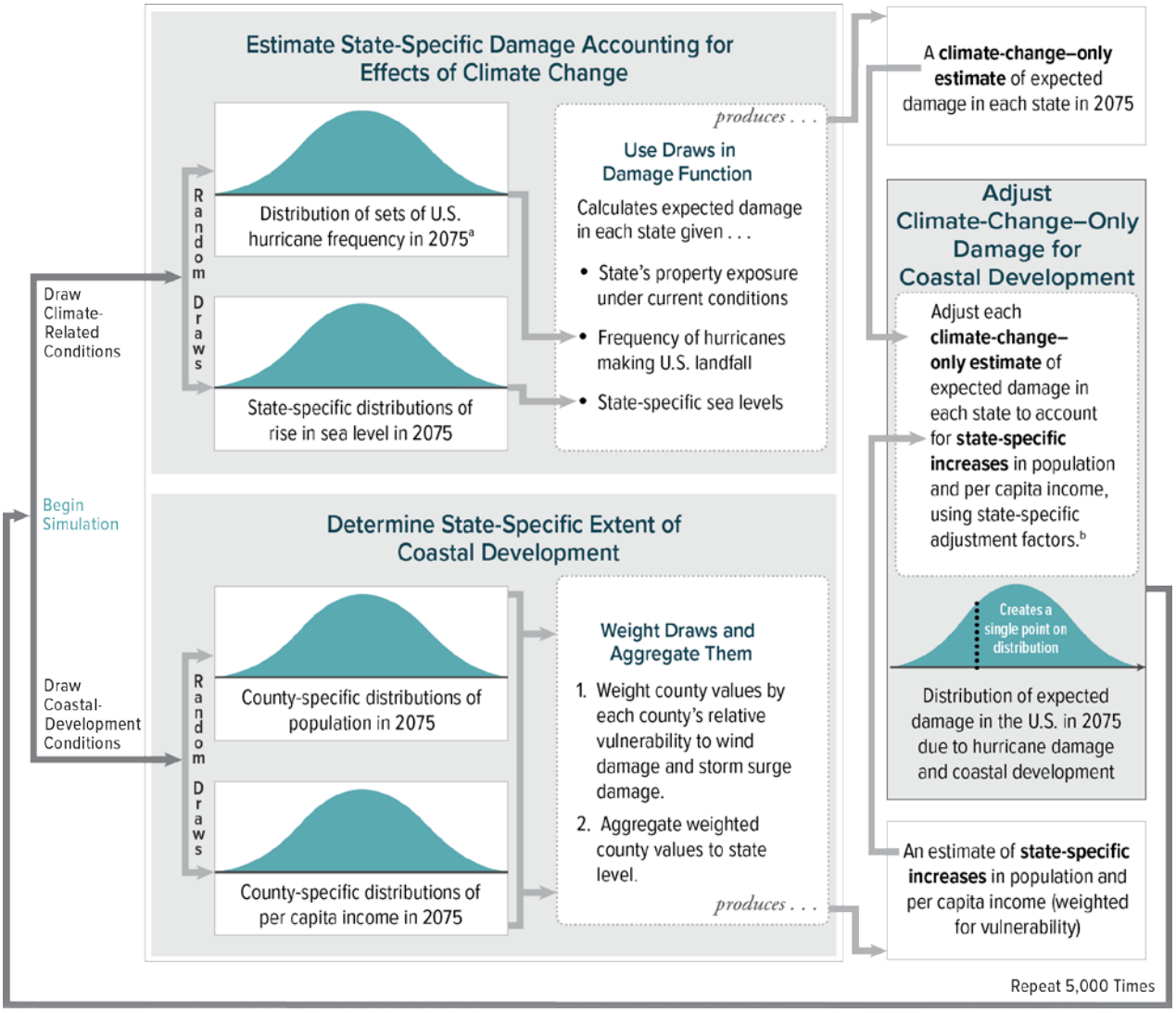


Consider using a timeline to illustrate steps in a process.

Congressional Budget Office, *CBO's Revenue Forecasting Record* (November 2015), p. 5, www.cbo.gov/publication/50831.

Flowchart, I

Flow of the Model for Estimating the Effects of Climate Change and Coastal Development on Hurricane Damage in Selected Future Years: Example Year, 2075

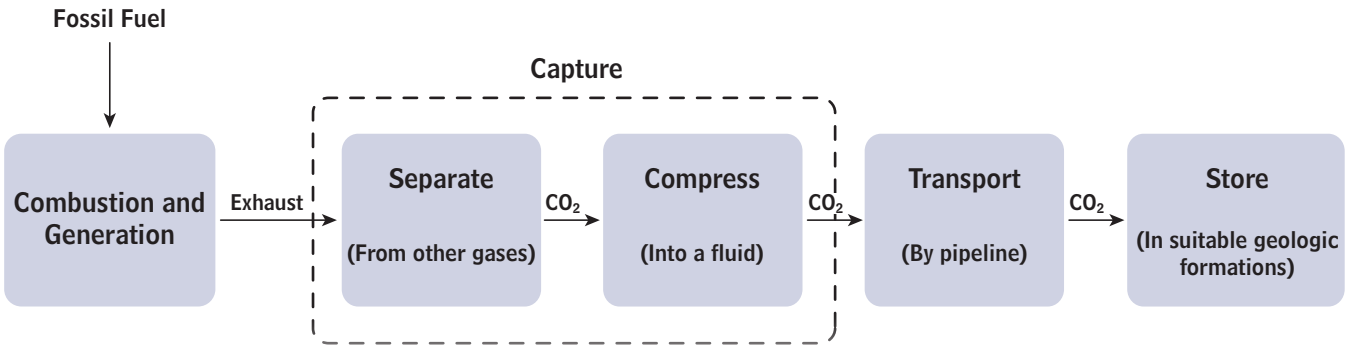


If the steps in a process are not tied to particular dates, a flowchart might illustrate it better.

Terry Dinan, *CBO's Approach to Estimating Expected Hurricane Damage*, Working Paper 2016-02 (Congressional Budget Office, June 2016), p. 7, www.cbo.gov/publication/51610.

Flowchart, II

Steps in the Capture and Storage of Carbon Dioxide After Electricity Generation at a Coal-Fired Power Plant

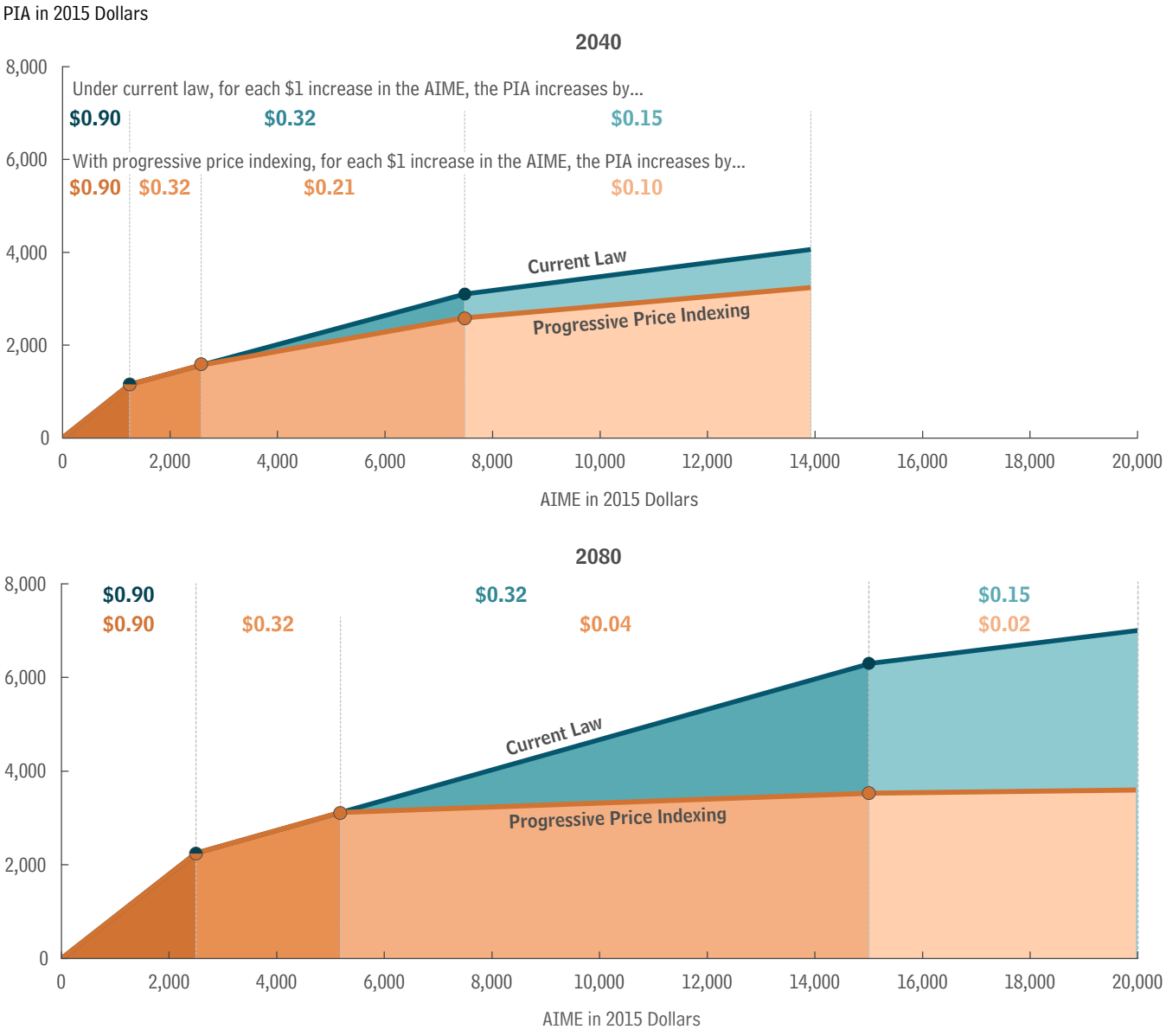


Here is a simpler one. Note that the previous flowchart illustrates a modeling process at CBO and that this one illustrates a mechanical process elsewhere. Both are useful, but the first kind may be more often applicable to CBO's work.

Congressional Budget Office, *Federal Efforts to Reduce the Cost of Capturing and Storing Carbon Dioxide* (June 2012), p. 2, www.cbo.gov/publication/43357.

Annotated Figure

Calculating the PIA Using Progressive Price Indexing (Option 19)

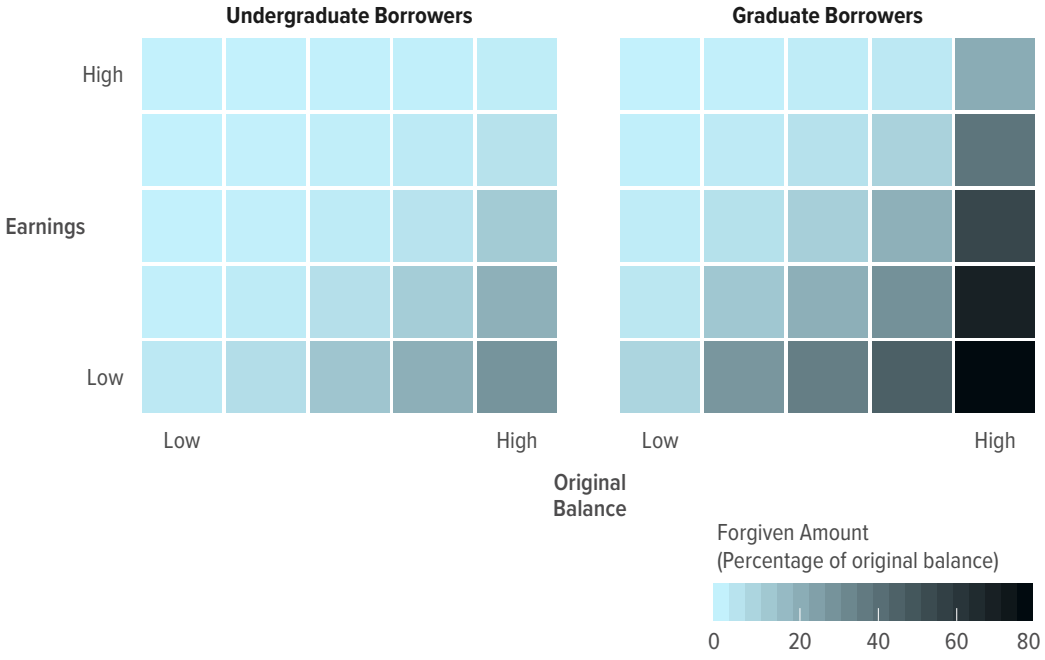


Annotations are similar to CBO's usual captions, but they appear inside the figure and comment on particular spots.

Congressional Budget Office, *Social Security Policy Options, 2015* (December 2015), p. 57, www.cbo.gov/publication/51011.

Heatmap, I

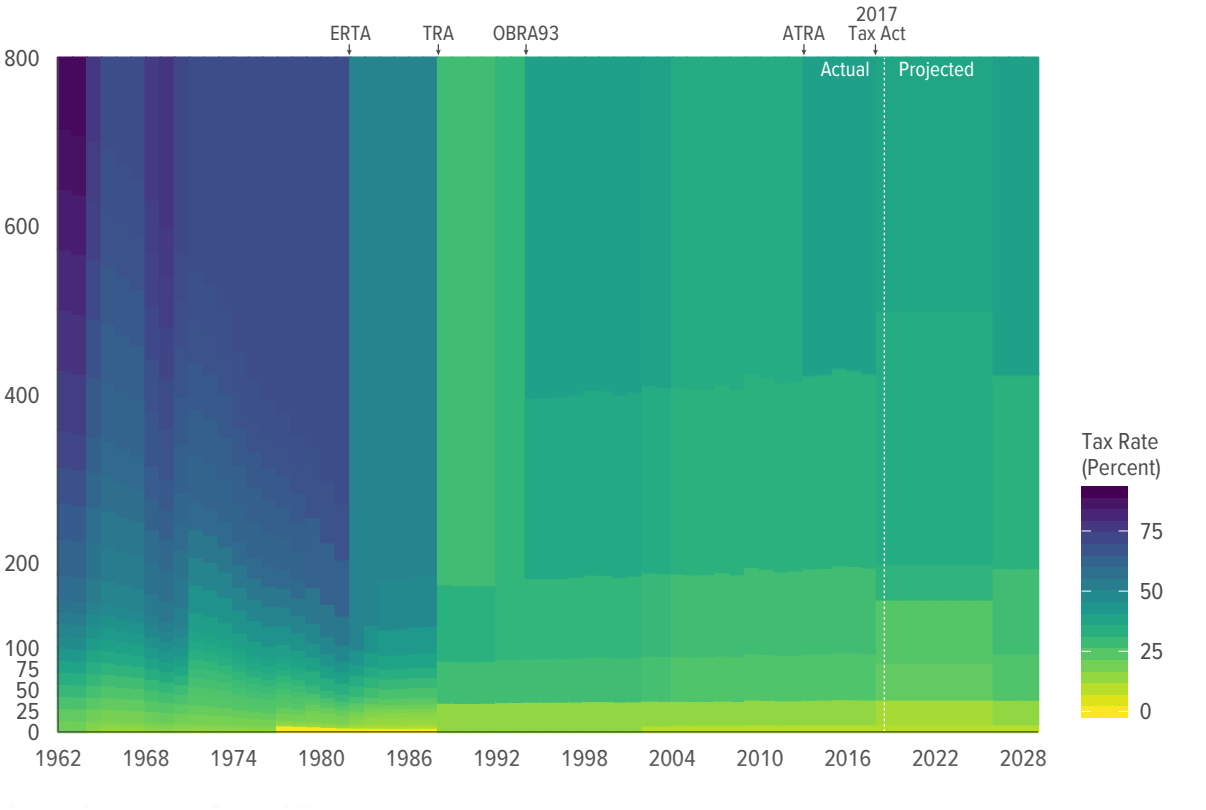
Forgiveness of Loans Issued From 2020 to 2029, by Borrowers' Projected Earnings and Original Balance



Heatmaps can be laid out in many ways; this guide shows two. What they have in common is that they use hue or lightness to communicate values.

Congressional Budget Office, *Income-Driven Repayment Plans for Student Loans: Budgetary Costs and Policy Options* (February 2020), p. 25, www.cbo.gov/publication/55968.

Heatmap, II



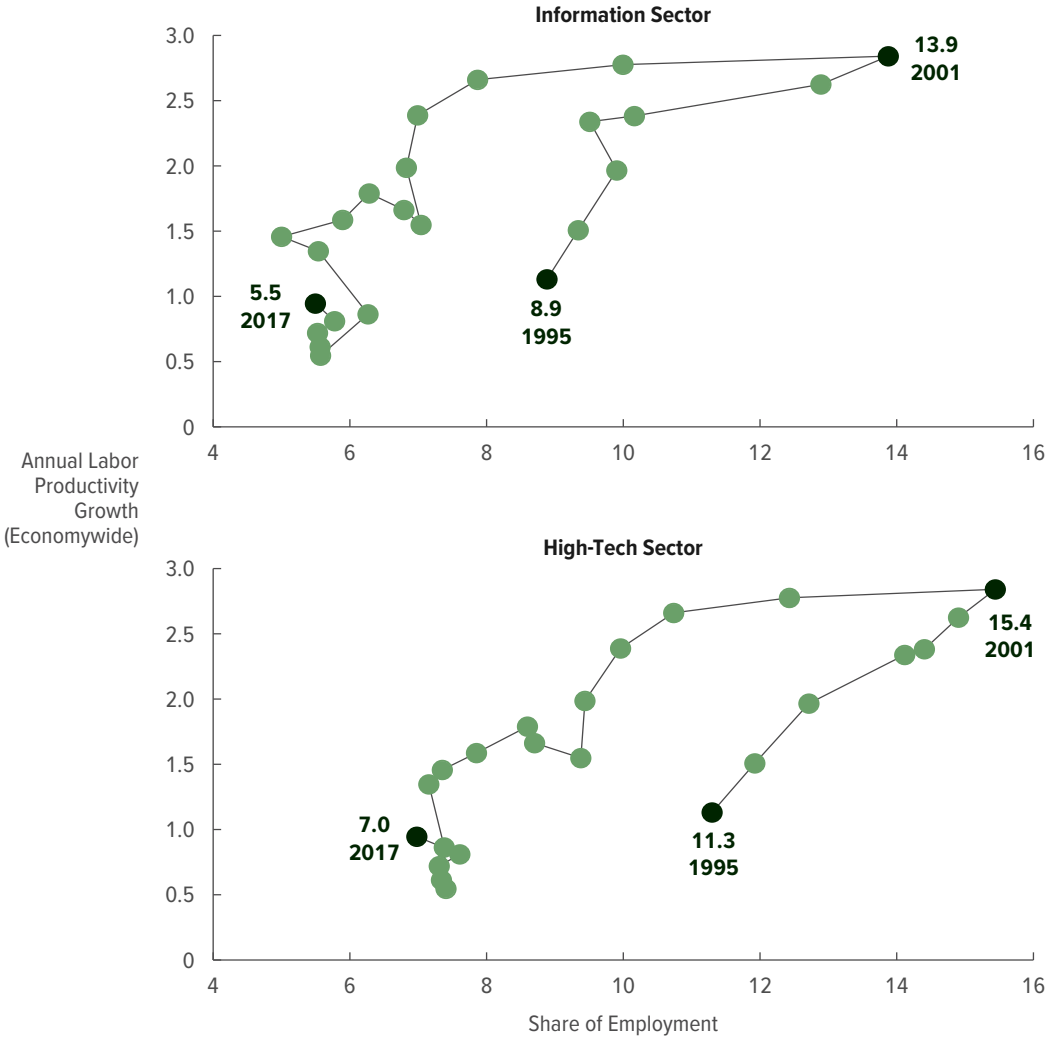
Indeed, a heatmap can use both hue and lightness to represent a lot of data at once. This sample appropriately emphasizes the big picture for tax rates and changes to them while lacking the precision of far less data plotted as, say, multiple lines showing the tax rates at various selected levels of income.

Congressional Budget Office, *Marginal Federal Tax Rates on Labor Income: 1962 to 2028* (January 2019), p. 19, www.cbo.gov/publication/54911.

Connected Scatter Plot

Trends in New Firms' Share of Employment, by Sector, and Labor Productivity Growth in the Economy, 1995 to 2017

Percent



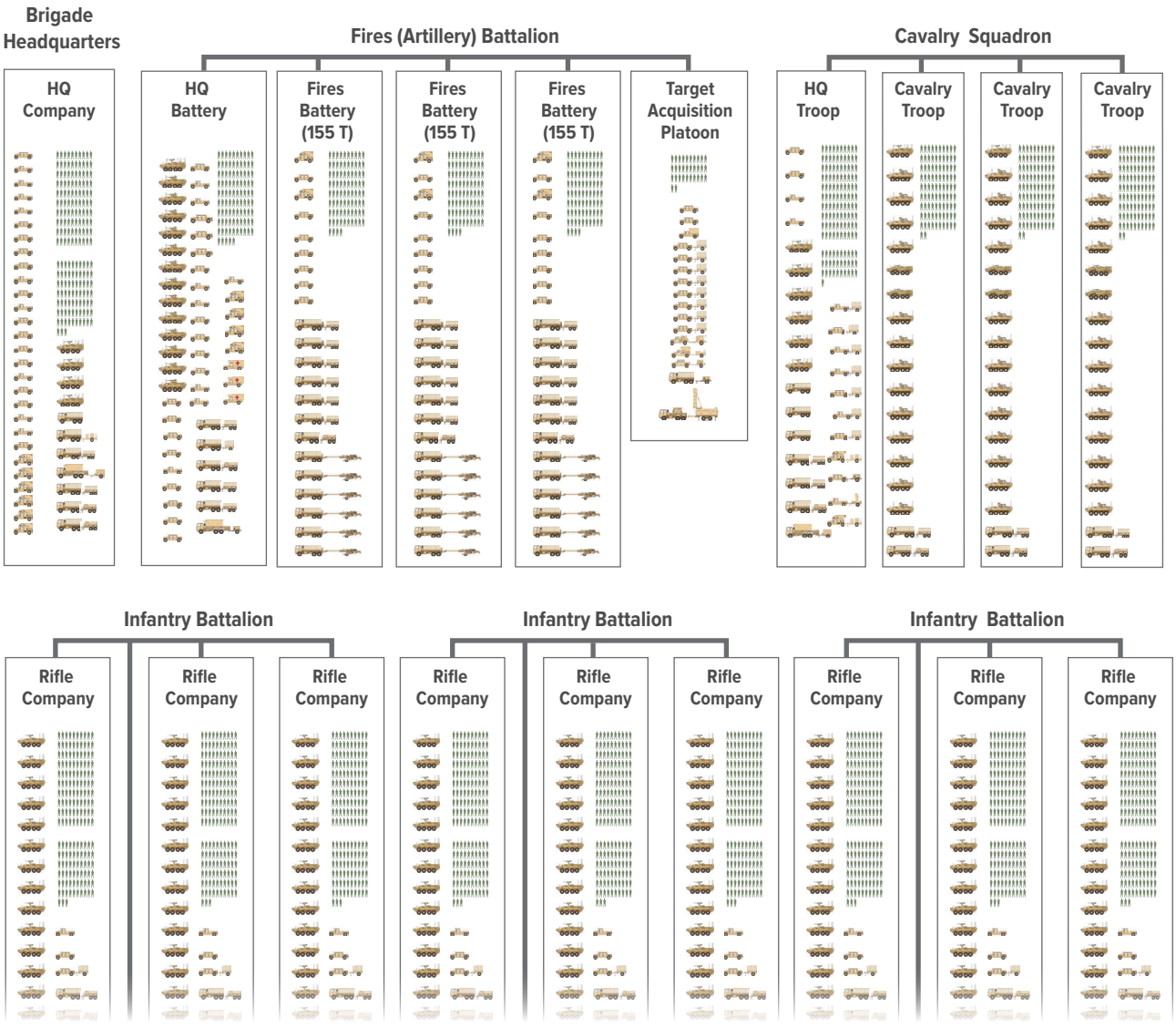
New firms in the high-tech and information sectors that were more productive than their competitors increased their employment more rapidly from the mid-1990s through 2001 than they had previously. The technological advances brought about in those sectors allowed firms throughout the economy to increase their productivity. After 2001, the shift in employment from low-productivity firms to high-productivity firms in the high-tech sector—and the broader economy—ebbed.

The x-axis of a chart does not always have to show time; a scatter plot allows observations to be made about other variables.

Congressional Budget Office, *Federal Policies in Response to Declining Entrepreneurship* (December 2020), p. 11, www.cbo.gov/publication/56906.

Icon Array

Units, Equipment, and Personnel in an Army Stryker Brigade Combat Team

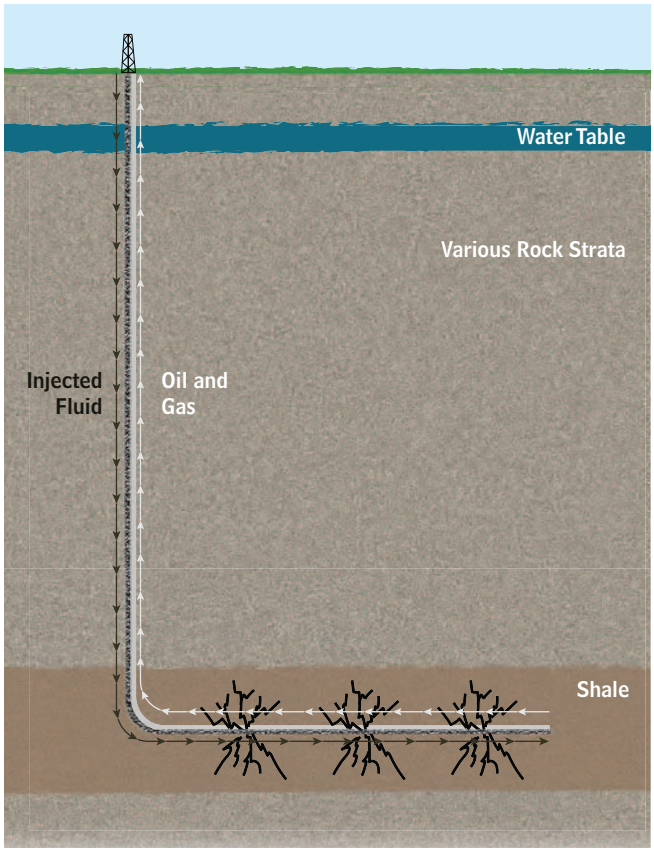


This material could have been presented as a less interesting table. Luckily, the items being counted, such as trucks and soldiers, lent themselves to illustration.

Congressional Budget Office, *The U.S. Military's Force Structure: A Primer* (July 2016), p. 30, www.cbo.gov/publication/51535.

Illustration, I

Hydraulic Fracturing and Horizontal Drilling

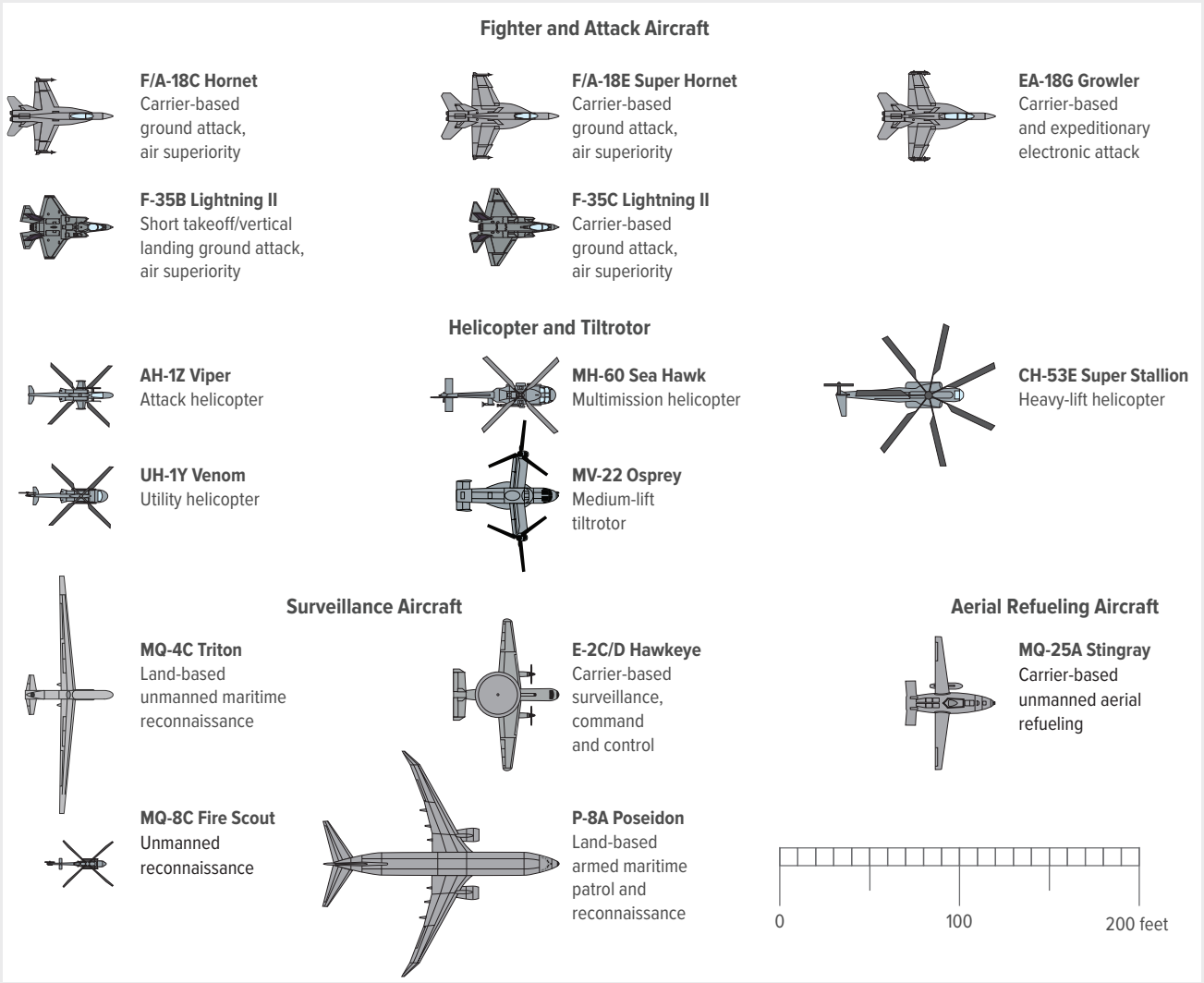


Even if a publication is not trying to show quantities (as in the icon array on the previous page), would it help the reader to see the physical object or process that the work describes? CBO thought that illustrations would be useful in reports about fracking . . .

Congressional Budget Office, *The Economic and Budgetary Effects of Producing Oil and Natural Gas From Shale* (December 2014), p. 3, www.cbo.gov/publication/49815.

Illustration, II

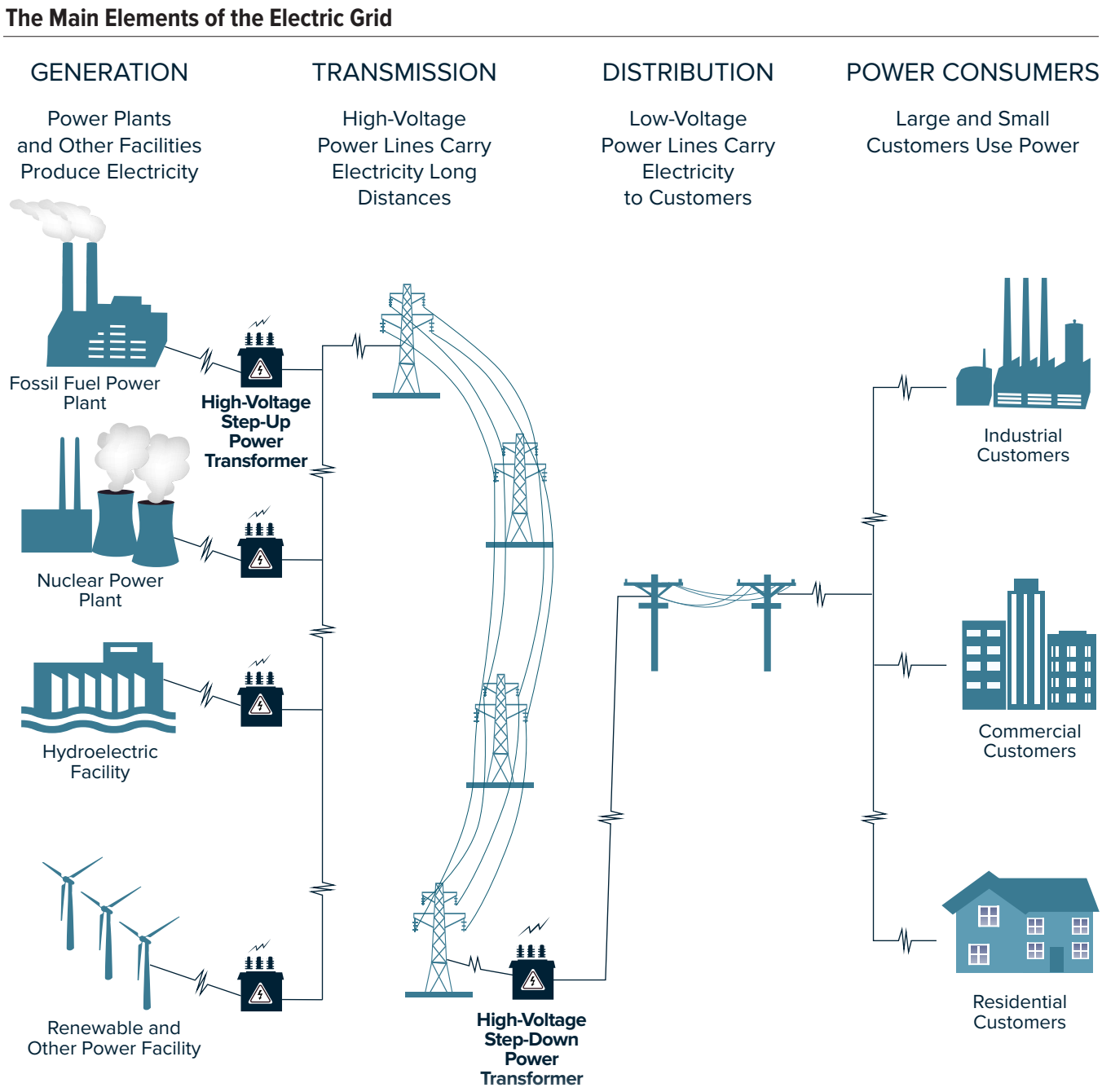
Selected Aircraft in the Department of the Navy's Aviation Fleet



. . . and Navy aircraft.

Congressional Budget Office, *The Cost of Replacing Today's Naval Aviation Fleet* (January 2020), p. 2, www.cbo.gov/publication/55949.

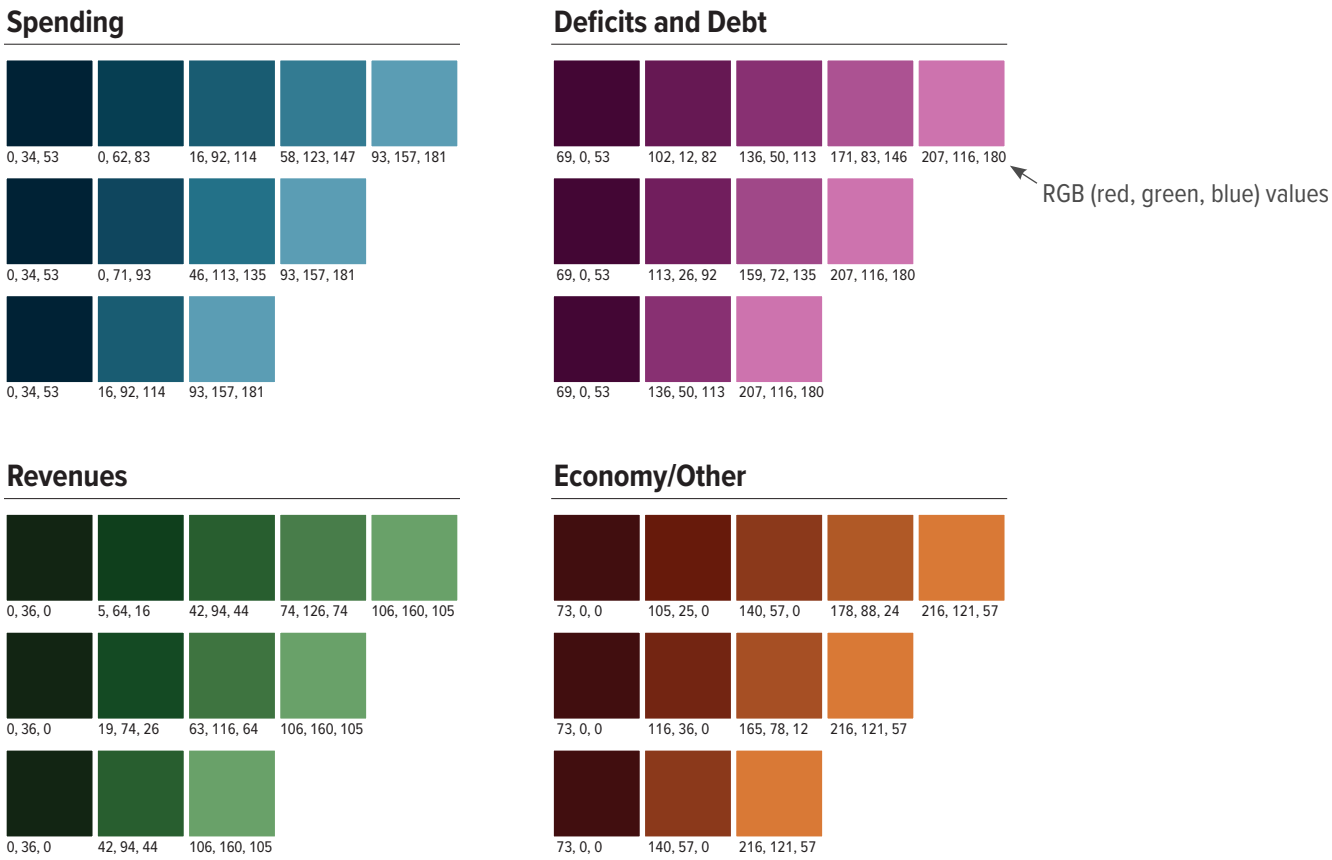
Diagram



Diagrams can help illustrate processes and concepts.

Congressional Budget Office, *Enhancing the Security of the North American Electric Grid* (March 2020), p. 6, www.cbo.gov/publication/56083.

Appendix: Drafting Graphics

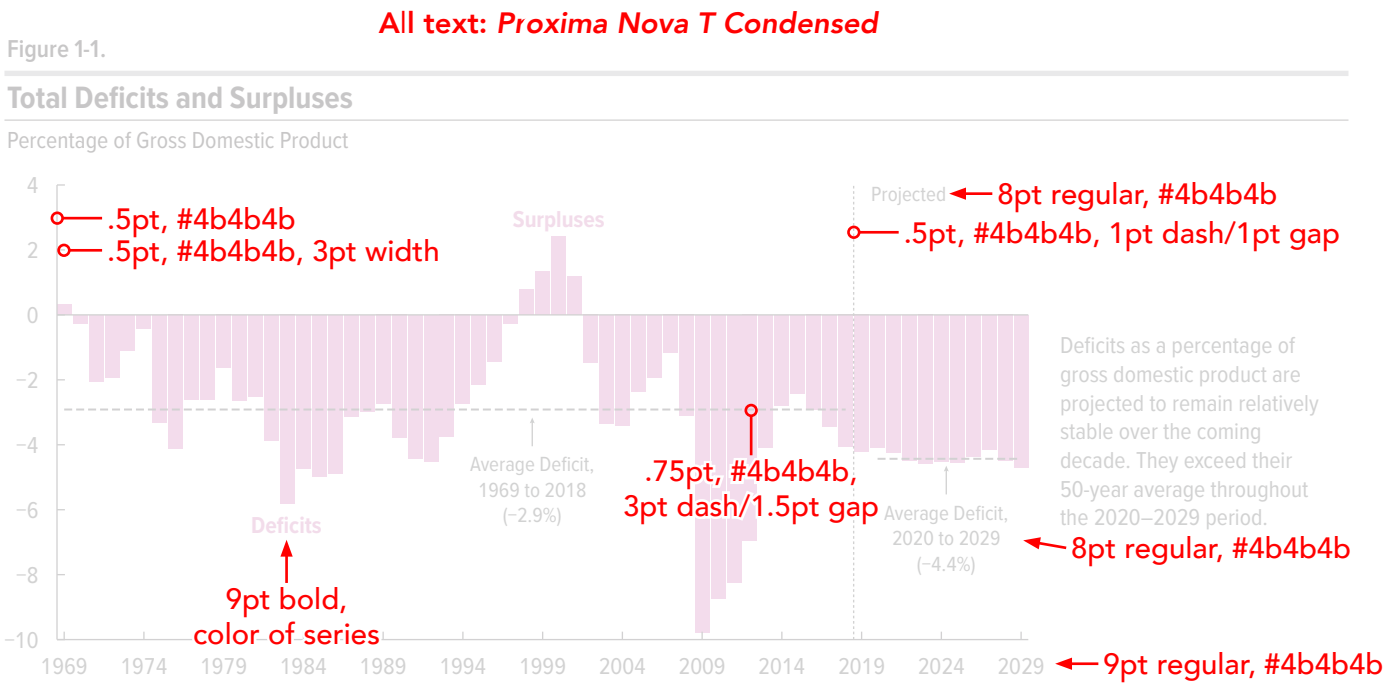


At some point, CBO's graphics editors will work with analysts—often, starting from their early mockups—and make figures that look like the ones shown in this guide. To make those mockups look a little more like the finished products, consider two areas: color and fonts.

CBO's default palette has four hue families. In some reports, but certainly not all, those four families represent the four topics indicated above. Each family steps through a range of values from dark (but still distinct) to light (but still able to work in text).

CBO avoids making distinctions using hue alone. Lightness differences hold up better under conditions of black-and-white printing, photocopying, color blindness, and visual impairment.

Appendix: Drafting Graphics



CBO's figures and tables exclusively use **Proxima Nova T Condensed**. The "T" part means that numbers are monospaced, so in a table, the digits line up vertically. The "condensed" part means that more characters fit in a given width, a practical consideration for typesetters.

The Proxima Nova fonts are not available to most CBO employees. Arial Narrow is a reasonable approximation that can be used in early mockups.

Page from CBO's *Look Book* (internal document, Editorial and Publishing Services).